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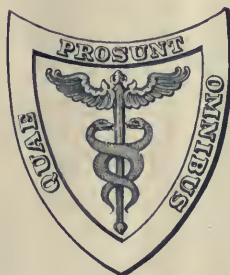
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EDITED BY

J. RIDDLE GOFFE, PH.B., M.D.

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ORIGINAL ARTICLES.

THE TREATMENT OF PULMONARY TUBERCULOSIS.¹

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IN the November number of the *Occidental Medical Times* of last year I described a method of treatment of pulmonary tuberculosis which was based upon some original conceptions of the mode of generation of antitoxins in the animal body. Further research and clinical experience has enabled me to confirm the statements made at that time, and also those contained in an additional note published one month later. My clinical observations, and those of my colleagues who have investigated the remedy, have established the efficacy of oxytuberculin beyond a doubt. Culture experiments, as will be seen, show how the agent acts and enables us to measure the potency of each preparation of the oxytuberculin in a manner that has not yet been possible with any of the antitoxic serums.

Before the year 1890 the attitude of the medical profession toward pulmonary tuberculosis was that of almost absolute helplessness. We had learned to diagnosticate the disease in its early stages by the microscopic examination of the sputum through the presence of the bacillus tuberculosis, but we felt that when we had established the presence of the dread disease all that we could do was to send the hapless patient to a congenial climate in the hope that fresh air and exercise might prove of benefit. As far as active therapeutic intervention was concerned, however, we knew that we could do nothing. Then came the glad tidings that Koch had found the long-sought-for specific—that his tuberculin was the certain cure for tuberculosis wherever it might be found. We shall probably never again witness such enthusiasm in medical circles as that which was aroused by Koch's demonstration. We had learned to look upon his statements as demonstrated facts, for he had never until then enunciated a doctrine which had not been found to be correct. We even felt that the secrecy of the remedy was to be forgiven in him—although in another such a procedure would have been considered quackish. Truly it seemed marvel-

ous that an infinitesimal quantity of an organic liquid injected under the skin of a tuberculous individual should cause a violent febrile reaction with congestion of the tuberculous mass, and no effect on other tissues. Everyone was eager to try the new remedy even if he did not know what it was, and happy was he if he were one of the favored few who could obtain it at any price. But the reaction came only too soon. Virchow showed at the *post-mortem* table what the influence of the tuberculin really was. In a large number of cases death was hastened by its use and dissemination of tubercle was induced by it to an extent that the great pathologist had not seen before. From that time on the credit of tuberculin began to wane, and soon it fell into disrepute as a remedy for tuberculosis with the vast majority of physicians. It still holds its place for diagnostic purposes, for the febrile reaction following its injection is a certain sign that tuberculosis is somewhere present in the body. We now know what tuberculin is and how it is prepared. Upon the surface of veal bouillon containing glycerin and peptone a pure culture of the bacillus tuberculosis is floated and cultivated at 38° Centigrade. After six to eight weeks a pellicle will have covered the surface and sunk to the bottom of the vessel. The fluid is then sterilized by heat, filtered through a Pasteur filter and evaporated to one-tenth its volume. This is the crude tuberculin such as was formerly used. Now this crude liquid is precipitated with alcohol, washed, and dissolved in water.

Feeling that there was an element of truth in the statements of Koch that tuberculin cures consumption, and that the ill effects resulting from its use must be due to some extraneous foreign elements, several investigators have attempted to purify it and have used what they supposed to be a purified tuberculin under various names. The most prominent of these preparations is that of Klebs, which he terms "antiphthisin." Unfortunately the claims made by Klebs have not been confirmed by experience. Trudeau has clearly proved that antiphthisin is merely a very dilute tuberculin. We will see during the course of these remarks that Trudeau was quite correct when he stated that Klebs erred in affirming that tuberculin inhibited the growth of the tuberculosis bacillus, for he showed that it is the acid that develops in the culture-fluid which acts as a preventive of further growth. I can confirm Trudeau's state-

¹ Read before the California State Medical Society.

ments, for in equal parts of tuberculin and veal bouillon which has been made alkaline, the tubercle bacillus grows as freely as in the plain veal bouillon. Clinical observations have been as adverse to the claims of Klebs as have been laboratory experiments.

In 1890 Behring enunciated the doctrine of the antitoxic substances which develop in the animal organism from the bacterial toxins, and this led to the introduction of the antitoxin of diphtheria into general medical practice. In spite of occasional adverse criticism and an occasional death due directly to the remedy, it has proved its value in the treatment of diphtheria beyond a doubt, and thousands of lives are yearly saved that would otherwise undoubtedly have been lost.

Stimulated by these excellent results, numerous investigators have attacked tuberculosis in a similar manner and have probably met with some success. This is true of Paquin in our country and Maragliano in Italy. Their method of procedure is to inject gradually increasing quantities of tuberculin hypodermically into a horse until the animal becomes immune to such large injections. The blood is then drawn from the jugular vein into a sterile flask, allowed to coagulate in a cool place, and the sterile serum is drawn off for use as the antitoxin. It will require a long observation of results by many clinicians before we will be able to arrive at a knowledge of just how much may be accomplished by this serum. But even if it should be finally proved that an antituberculin develops in animals so treated, its use as a curative agent in man is attended by several obstacles and dangers. In the first place, the quantity of tuberculin used, and hence the quantity of antituberculin developed, is so infinitesimal that when dissolved in the blood and plasma of the animal it is present in such minute proportions that the numeral would be far removed from the decimal point in its representation in figures. In the second place, the antituberculin elaborated in the blood must be administered dissolved in the serum of the animal. We know from several deaths which have immediately followed the administration of the diphtheria antitoxin that this is by no means an indifferent substance which may be administered in unlimited quantities. We know that in the animal body the antitoxin develops in some manner from the toxin; if we were able to discover the process it is clear that we might be able in our laboratories to imitate the method and so produce the sought-for remedy in unlimited quantities and free from deleterious admixture. Until now no satisfactory theory has been established, and no indication has been given of the lines upon which to proceed.

With regard to tuberculosis, however, it seems to

me that the course to pursue has long been before the medical profession even though we have been unable to read what Nature has written for us in her hieroglyphics. The theory which lies at the foundation of the therapeutic measures about to be described is even more important than the results themselves, for if it should be found to be correct, it will be an addition to our biologic knowledge of the greatest scientific importance. This theory was thought out early in October, 1895, and the various modes by which it might practically be applied were clear before a single step was taken. In other words, the theory was not evolved from the therapeutic results, but the method of treatment was a consequence of the biologic proposition. The therapeutic success may therefore be looked upon as a verified prediction, and hence has far greater evidential value than it otherwise could have. The treatment of patients by the new method was very cautiously begun on October 22, 1895, and as the results warranted, the doses were gradually increased until after a few months efficient quantities were administered. I am pleased to be able to say that to my knowledge no patient has been injured by the use of the remedy.

In 1864 Spencer Wells performed laparotomy, in consequence of an erroneous diagnosis, upon a patient suffering from tuberculous peritonitis. Contrary to all expectations, the patient recovered. Numerous cases have since been reported in which the same favorable results occurred; indeed, the peritoneum which was observed at the operation to be studded with tubercles has been found years after, at a second operation, to be smooth and free from all tuberculous deposits. Distant tuberculosis has also been observed to disappear after laparotomy upon a tuberculous peritoneum. It appears most probable that in these cases the entrance of air into the peritoneal cavity must have been the important factor; that an oxidation of the tuberculin present in the effusion was thus brought about and that it was this oxytuberculin which effected the cure both of the local and of the general tuberculosis. It certainly seems a very probable hypothesis that it is by oxidation that the toxin is changed into antitoxin in the animal body, for there is no process of the economy so universal as oxidation. The first and most evident result of the introduction of a toxin is fever, with increased oxidation as if Nature was striving with all her power to change by this process the poisonous substance into its antidote.

Acting upon this hypothesis the problem of finding a method of oxidizing the toxin without completely destroying it presented itself, and various methods of accomplishing this result were investigated. I will not weary you with a description of the different forms

of experiment which were attempted, nor of the steps which were taken until the method was finally perfected, but shall describe in as detailed a manner as I can the mode in which oxytuberculin is now manufactured. I found very soon in the course of my experiments that the peroxid of hydrogen was the substance for which I was seeking, and that it is a powerful oxidizer but not so destructive as is generally supposed. When I added it to tuberculin at a low temperature and injected the latter into a tuberculous patient or animal even after the mixture had stood for some time it produced the same reaction as if pure tuberculin had been used. I found that in order to avoid such reaction it was necessary to heat the mixture for at least ninety-six hours. I have lately found it wise to lengthen the period of heating even more, and now I sterilize it for 120 hours, obtaining better results than formerly. I formerly used the tuberculin prepared by Koch in Berlin, but have been able to obtain still better results with one of my own growth, made by the development of a highly virulent bacillus of tuberculosis upon veal bouillon containing four per cent. of glycerin, one per cent. of peptone, and one-half per cent. of chlorid of sodium, to every liter of which, when neutralized, 3 c.c. of a normal solution of carbonate of sodium is added. In this culture-fluid the germ has developed with gradually increasing rapidity so that whereas ordinarily it takes six weeks for the culture-fluid to be completely covered by the growth, this now occurs in my laboratory in less than three weeks. Injected into guinea-pigs it kills many of them in less than three weeks, the organs being overwhelmed with tuberculous nodules.

After the germ has fully grown so that the tuberculous scum which floats on the surface begins to sink, the flask is sterilized by heat for two hours, and the contents are filtered. This is the tuberculin I use. A measured quantity is put into a stone jug and one-tenth the quantity of a ten-volume solution of peroxid of hydrogen is added, and the jug is stoppered with cotton and put into a sterilizer at 100° C. Every twelve hours the same quantity of peroxid of hydrogen is added until the process has been repeated the tenth time, so that, in all, the quantity of solution of peroxid of hydrogen added shall equal the quantity of tuberculin used. This is then heated to 100° C. for twelve hours longer, and at the end of that time (120 hours in all) it is found still to contain free peroxid of hydrogen, is highly acid, and is decidedly darker than was the original tuberculin. It is made alkaline with caustic soda and reheated to drive off the excess of peroxid of hydrogen. Five per cent. of boric acid is added to keep it from decomposing. It is filtered into sterile vessels and is ready for use.

It now does not contain a trace of the peroxid of hydrogen, which has all been changed to water.

Theoretical objections have been made to the process by some who claim that the peroxid of hydrogen must rapidly be destroyed by the organic substances present in the liquid. It is very easy to prove that this supposition is incorrect, for at any stage of the process up to the final addition of the alkali free peroxid of hydrogen may be found by the usual chemical tests, such as the blue color which develops with the iodid of starch, and the pretty reaction with a mixture of bichromate of potash and sulphuric acid, in which the free peroxid of hydrogen causes a beautiful blue color to develop.

The greatest possible care is necessary in the preparation of this oxytuberculin, for if any appreciable quantity should escape oxidation fatal tuberculin poisoning might result from the large quantities which must be administered. It should be carefully tested, first on animals and then on patients. This oxytuberculin, after it has been thus carefully prepared and tested, is injected hypodermically into any part of the body. I prefer the back and inject the remedy well under the skin. The most scrupulous care must be taken. If the lymph should be in the least clouded, or any other condition be present that would suggest infection, it should be sterilized by heat for at least fifteen minutes. Ordinary syringes should not be used, but such as are employed with antitoxin. I have made many thousand such injections without causing the formation of a single abscess or even an induration of the skin. The liquid causes no greater local disturbance than any indifferent fluid would produce. There is no reddening of the skin or other sign of localized inflammation. In a few minutes the fluid injected is absorbed and the patient suffers no further inconvenience except sometimes a little smarting at the site of injection. There is no rise of temperature, or any other unpleasant constitutional effect. Within a few days the cough and expectoration diminish, and the most striking effect is the rapid improvement in the appearance of the patient. His eyes become bright and his color changes from the gray hue of tuberculosis to one more nearly resembling that of health. The appetite rapidly returns, and with it a feeling of vigor which is most pleasing to the patient and to the physician. This is especially evident in the very early cases in which there is little or no fever. In cases in which only slight fever is present the higher temperature soon diminishes and in many instances becomes entirely normal. At the same time the infiltration of the lung gradually disappears, so that a most careful examination fails to reveal any deviation whatsoever from the normal after the treatment is completed.

The tubercle bacilli in the sputum may rapidly diminish in number and finally disappear altogether, as I have found in a number of cases.

Every physician has seen patients with tuberculosis recover, but it has never before been my good fortune to witness such rapid changes as have taken place in several that had been examined by other physicians both before and during the treatment. The patients that have recovered have thus far remained well. If any test of the method should be made by other members of the profession I would earnestly request that provisionally only early cases of the disease be treated, in which there is no development of cavities in the lung, in which fever is slight, and in patients in whom the constitutional condition is such that a return to health may reasonably be expected.

One of the most striking demonstrations of the value of the remedy occurred in a case of tuberculosis of the hand. A physician infected the dorsum of his right hand, and an ulceration developed which microscopic examination showed to be tuberculous. It was treated in the usual manner, and without beneficial result, so that the surgeon was about to make an extensive excision which was to be followed by skin grafting. Instead, local applications of the oxytuberculin were made and very rapid healing took place, leaving behind the same kind of scar as would have resulted from a non-infected ulcer. As a confirmation of this observation I show you here a dog that was vaccinated upon the back in a large number of places with a virulent pure culture of tubercle bacilli. After a short time, numerous tuberculous ulcers developed, in the pus of which the bacilli of tuberculosis were demonstrated. A section made by Dr. Rixford showed bacilli in the tissues. The dog was then chloroformed and a piece of the skin with the tuberculous ulcers was removed. The dog was then treated daily with hypodermic injections of oxytuberculin. The ulcers rapidly healed, and you now see the animal with the scar resulting from the removal of part of the tuberculous skin but with no sign of the disease with which he was inoculated. I will say that since the injections of oxytuberculin the dog that was ailing, feeble, and without desire for food, has become bright, strong, and vigorous, and has developed a voracious appetite.

The patients that have been treated by me with the oxytuberculin, those who came in the very early stage of the disease, before cavities were present, have been rapidly cured. By cure I mean a complete cessation of cough and disappearance of all symptoms of disease on the part of the patient, together with the return of a normal condition of the lung, as shown by physical examination. Above all,

do I demand in these cases that the tubercle bacilli shall no longer be found in the sputum. Patients in whom the disease was moderately advanced have likewise rapidly improved, and some have entirely recovered. Of the very advanced cases, many have shown marked improvement, and many patients that I have declined to treat as being too far advanced but who pleaded so hard for the treatment that I could not refuse, have surprised me by the wonderful improvement they have shown. Some in the last stages of the disease who presented themselves with high fever, and who were cyanotic and gasping, have died. No treatment could be expected to benefit such patients. Of course they throw a cloud upon the statistics for they must honestly be reported with the more favorable ones. I shall therefore present to you all of the cases I have treated with oxytuberculin, but request you not to judge of the treatment by the advanced cases, for which I make no claim, whatsoever.

In order to systematize our observations I will divide the cases into four sets depending upon the stage of the disease. In the first stage we find infiltration of the lungs, with more or less pallor, loss of weight, and cough, and with sputum containing tubercle bacilli. The bacilli may be absent at repeated examinations and yet finally be found. In the second stage there is extensive infiltration of the lungs, with hectic fever, emaciation, and a large quantity of sputum containing the bacilli, but no cavities. In the third stage there are cavities, but still a fair degree of vigor. There is no dyspnea when the patient is quiet, but marked shortness of breath on exertion. In the fourth stage there are large cavities, with the usual signs of advanced consumption, and the dyspnea is very decided even when the patient is sitting or lying down.

Many of the patients here presented in person and represented in the accompanying table have been seen by other physicians before and during the treatment. My colleagues have confirmed my observations, and I am certain that they will agree that I have not erred in making my reports too favorable. It has been my purpose to be as skeptical as possible and I have striven to make the showing rather less favorable than too much so. I find that the patients that had been treated with oxytuberculin insufficiently oxidized did not give the same results as those treated with the newer preparation, and therefore have tabulated the cases separately.

Clinical observation having thus shown the very marked effect of oxytuberculin, it remains for us to establish in what manner this cure is effected. There are two methods by which the body may rid itself of an invading micro-organism; the one is by the en-

feeblement of the germ, and the other is by the invigoration of the body so that it becomes sufficiently potent to expel the invader. We know that we are all constantly taking the bacillus of tuberculosis into our bodies. It has been shown by Loomis at *post-mortem* examinations of healthy individuals who have died from accident that many have tubercle bacilli stored up in the bronchial glands, out of harm's way but alive and able to infect guinea-pigs when injected into them. Again, we constantly observe that tuberculosis develops when the patient becomes physically depressed, when the vital forces are at low ebb. On the other hand, innumerable patients with consumption recover under the influence of favorable hygienic conditions. The antitoxins of the infectious diseases probably act in a somewhat similar manner, for experiment has proved that they neutralize the pernicious toxins which are formed by the germs and which enfeeble the body by their poisonous influence. Upon the germs themselves they have little influence, for we know that pathogenic organisms flourish in the very serum which is used to antagonize their effect upon the body. How is it with oxytuberculin? It will be my privilege to prove to you that oxytuberculin directly prevents the growth of the bacillus of tuberculosis; that its action is specific upon that germ and that it is not due to a general antiseptic effect. If we take veal bouillon containing 4 per cent. of glycerin, 1 per cent. of peptone, and $1\frac{1}{2}$ per cent. of salt, and add to every 1000 c.c. thereof, when neutralized to litmus, 3 c.c. of a normal solution of carbonate of soda, we will find that the bacillus tuberculosis will grow vigorously upon it. If we mix this veal bouillon with equal parts of tuberculin, made similarly alkaline, the germ will flourish just the same, but if we use oxytuberculin made from the same tuberculin rendered alkaline to the same degree, the bacillus of tuberculosis will not grow. In other words, the oxytuberculin inhibits in the culture-tube the growth of the germ of tuberculosis just as it cures the consumption in the patient. Not only can this be proved by the simple culture experiment, but the strength of the oxytuberculin can most accurately be gauged by the same process. If to our standard alkaline-glycerin-veal-bouillon we add oxytuberculin in varying proportions, it will be a simple matter to find the weakest dilution of the oxytuberculin in which the growth of the bacillus will be inhibited, and thus it may be standardized. In a similar manner any oxytuberculin may be standardized, so that when we use it we may know accurately how potent the remedy is which we are employing. Such a method of estimating the strength of a preparation is infinitely superior to that of judging it from its effect upon more or less resistant animals.

From the very beginning of the experiments it was my purpose to discover some means of knowing how long I should continue the oxidation in order that all of the tuberculin should be changed to oxytuberculin, and none of the latter be destroyed. There was no chemical test known, and all of my efforts to find one were in vain. I was therefore compelled to make use of the reaction of tuberculous guinea-pigs to find the point when no effective tuberculin could be found. It is clear that a certain amount of the tuberculin might be present but neutralized in its effects by the oxytuberculin. Under such circumstances we would get no deleterious tuberculin influence, but still not the best possible oxytuberculin action. In the manufacture of the oxytuberculin I had gradually begun to lengthen the time during which I heated the tuberculin with the peroxid of hydrogen, and finally decided upon the method of sterilizing for four days. Oxytuberculin so prepared gave excellent results and no reactions until I happened to use large doses (40 c.c.) in the case of a highly sensitive hospital patient. A slight rise of temperature occurred that made me feel that all of the tuberculin had not been converted. About this time I had discovered the inhibitory influence of the oxytuberculin, and I immediately concluded that this influence would teach me what was the best length of time to continue the oxidation. I reasoned that if my theory was a correct one, as I continued the oxidation, this inhibitory power must gradually increase until the maximum is reached, and as the oxytuberculin produced is gradually destroyed by further oxidation, from this point on there must be a gradual decline of this inhibitory power. Such, indeed, was the result obtained. I sterilized tuberculin with peroxid of hydrogen for 176 hours, adding the peroxid every twelve hours and removing portions of the lymph for comparison at 96, 120, 144, and 156 hours. The final oxytuberculin which had been sterilized 176 hours contained but fifty-three per cent. of the quantity that was present in that sterilized only ninety-six hours, and in order to make a fair comparison, after free peroxid in all the preparations was removed by rendering them alkaline and heating, all were diluted to the same proportion with distilled water, the quantity added depending upon the degree to which it had been diluted in the process of preparation by addition of peroxid of hydrogen, which, of course, had become changed to water. All of the preparations were then neutralized and three-tenths of one per cent. of normal carbonate of soda added. Each of the oxytuberculins was mixed with an equal quantity of standard veal bouillon and inoculated with a pure culture of the bacillus tuberculosis. As a control, standard veal

bouillon was mixed with an equal quantity of water to which three-tenths of one per cent. of normal carbonate of soda was added and was likewise inoculated with the same germ. There was rapid growth in the veal bouillon, less in the 96-hour oxytuberculin, and hardly any in the 120-hour oxytuberculin, which, you will remember, had been diluted with water and veal bouillon to only 26½ per cent. In the 144-hour oxytuberculin growth increased, was greater in the 156-hour preparation, and in that sterilized 176 hours was almost as great as in the veal bouillon. This simple experiment not only confirmed our previous culture-tests, but likewise taught that at least 120 hours and less than 144 hours are necessary to obtain the best results. In point of fact, as soon as I began to use oxytuberculin so prepared upon my patients immediate and striking results occurred such as I had not witnessed before. I shall now narrow the range still more by tests of oxytuberculins heated for different periods between 120 and 144 hours. I have done this in part with another sample of oxytuberculin which was sterilized 144 hours and a portion removed after 134-hours' sterilization. These were made 0.3 per cent. normal alkaline, and each was mixed with equal quantities of standard veal bouillon. They were inoculated with tuberculosis at the same time as was veal bouillon. Three cultures of veal bouillon and four each of 134- and 144-hours' oxytuberculin were made. All of the veal bouillon and all of the 144-hour oxytuberculin flasks showed vigorous growth and none of the 134-hour oxytuberculin flasks.

Provisional experiments made with cultures of staphylococcus, micrococcus ureæ, bacillus typhosus, and bacillus diphtheriæ have given results analogous to those obtained with the bacillus tuberculosis. Cultures of these germs were sterilized and filtered in the same manner and were oxidized similarly with the peroxid of hydrogen for various periods and then treated in the same manner. They were likewise mixed with veal bouillon and inoculated with the respective germs, as was a control with veal bouillon. In all of them a complete suppression of the growth of the micro-organism occurred, but the length of time that oxidation was necessary to produce this result differed with different germs. The presence of the inhibitory action of the oxytoxin upon growth of the germ in four cases, in addition to that observed, proves the universality of the law and permits us to reason from analogy that not only will all of these diseases yield to oxytoxic treatment, but that this must be true of every disease the germ of which we can cultivate.

I will now call your attention to the tables which show the effect of the oxytoxins of the various germs.

As my attention had been directed to the faint possibility that the inhibitory influence might be due to the reaction of peroxid of hydrogen on veal bouillon, I treated that liquid with the oxidizer in the same manner as the cultures, sterilizing for 130 hours, and found that it had no effect whatsoever in any case.

MICROCOCCUS UREÆ.

Hours of oxidation.	Hours of growth.			
	24	30	43	70
43	?	Growth.	Growth.	Growth.
65	No growth.	No growth.	No growth.	No growth.
90	No growth.	No growth.	No growth.	No growth.
125	No growth.	No growth.	No growth.	No growth.
130	No growth.	No growth.	No growth.	No growth.
Veal bouillon....	Growth.	Growth.	Growth.	Growth.

TYPHOID.

Hours of oxidation.	Hours of growth.			
	24	30	43	70
43	Growth.	Growth.	Growth.	Growth.
65	Growth.	Growth.	Growth.	Growth.
90	Growth.	Growth.	Growth.	Growth.
125	Growth.	Growth.	Growth.	Growth.
130	No growth.	No growth.	No growth.	No growth.
Veal bouillon....	Growth.	Growth.	Growth.	Growth.

DIPHTHERIA.

Hours of oxidation.	Hours of growth.			
	24	30	43	70
43	Growth.	Growth.	Growth.	Growth.
65	No growth.	No growth.	No growth.	No growth.
90	No growth.	No growth.	No growth.	No growth.
125	No growth.	No growth.	No growth.	Slight.
130	Growth.	Growth.	Growth.	Growth.
Veal bouillon....	Growth.	Growth.	Growth.	Growth.

STAPHYLOCOCCUS.

Hours of oxidation.	Hours of growth.			
	24	30	43	70
43	Growth.	Growth.	Growth.	Growth.
65	Growth.	Growth.	Growth.	Growth.
90	Growth.	Growth.	Growth.	Growth.
125	Growth.	Growth.	Growth.	Growth.
130	No growth.	No growth.	No growth.	No growth.
Veal bouillon....	Growth.	Growth.	Growth.	Growth.

All of these tests show conclusively that the oxy-tuberculin inhibits the growth of the bacillus of tuberculosis. That this is a specific effect and not due to a general antiseptic action is proved by the facility with which other germs develop in the fluid. From all of the statements made, I believe that I have proved beyond reasonable doubt that consumption may be cured by the use of oxytuberculin if the remedy is administered during the early stages of the disease, and that the cure is effected by a direct action upon the causative germ.

GENERAL SUMMARY.

Stage.	Total number treated.	Cured.	Much improved.	Slightly improved.	Unimproved.	Worse.	Dead.
4th, old method.....	16	0	1	2	3	6	4
4th, new method.....	11	1	5	1	2	1	1
3d.	25	2	10	2	3	0	0
2d.	9	4	5	0	0	0	0
1st.	4	4	0	0	0	0	0
Total.....	65	11	29	5	8	7	5

FIRST STAGE.

No.	Name.	Number days treated.	Bacilli.		Cured.	Much improved.	Slightly improved.	Unimproved.	Worse.	Dead.
			Before.	After.						
1.	F. A. A.	134	Moderate.	None.	1	0	0	0	0	0
2.	M. L.	16	None.	None.	1	0	0	0	0	0
3.	M. Q.	305	None.	None.	1	0	0	0	0	0
4.	R. W. R.	106	None.	None.	1	0	0	0	0	0

SECOND STAGE.

No.	Name.	Number days treated.	Bacilli.		Cured.	Much improved.	Slightly improved.	Unimproved.	Worse.	Dead.
			Before.	After.						
1.	E. G.	258	Large.	None.	1	0	0	0	0	0
2.	W. M.	75	Moderate.	Not ex.	0	1	0	0	0	0
3.	N. R.	83	Large.	any. Mod.	0	1	0	0	0	0
4.	E. S.	91	Large.	large.	0	1	0	0	0	0
5.	Father S.	99	Moderate.	None.	1	0	0	0	0	0
6.	V. C. ¹	100	None found.	None.	1	0	0	0	0	0
7.	C. V.	90	Moderate.	None.	1	0	0	0	0	0
8.	T. L.	180	Large.	None.	0	1	0	0	0	0
9.	R. W. R. ²	36	None.	None.	0	1	0	0	0	0

¹ Sputum not examined until (through oversight) the patient had been treated one month.

² Bacilli found by former physician who sent the patient to me.

THIRD STAGE.

No.	Name.	Number days treated.	Bacilli.		Cured.	Much improved.	Slightly improved.	Unimproved.	Worse.	Dead.
			Before.	After.						
1.	D. B.	26	Moderate.	Not ex.	0	0	0	1	0	0
2.	S. D.	254	Large.	None.	1	0	0	0	0	0
3.	E. E.	37	Large.	Not ex.	0	1	0	0	0	0
4.	A. G.	126	Moderate.	Large.	0	1	0	0	0	0
5.	F. J.	162	Large.	None.	0	1	0	0	0	0
6.	M. L.	31	Large.	Large.	0	0	1	0	0	0
7.	J. M.	141	Large.	any. Mod.	0	1	0	0	0	0
8.	S. M.	365	Large.	Moderate.	0	1	0	0	0	0
9.	A. M.	30	Large.	Not ex.	0	1	0	0	0	0
10.	C. M.	22	Moderate.	Not ex.	0	0	1	0	0	0
11.	R. N.	237	Large.	Moderate.	0	1	0	0	0	0
12.	H. P.	285	Large.	None.	0	1	0	0	0	0
13.	T. P.	33	Large.	Not ex.	0	0	0	1	0	0
14.	L. T.	40	Moderate.	Not ex.	0	0	0	1	0	0
15.	F. A. S.	198	Moderate.	Moderate.	0	1	0	0	0	0
16.	C. H. W.	42	Large.	Large.	0	1	0	0	0	0
17.	M. W.	146	Moderate.	Few.	0	1	0	0	0	0
18.	J. W.	254	Large.	None.	1	0	0	0	0	0
19.	T. M.	250	Large.	Moderate.	0	1	0	0	0	0
20.	F. D. R.	300	Large.	None.	0	1	0	0	0	0
21.	W. H.	280	Large.	Moderate.	0	1	0	0	0	0
22.	M. W.	120	Small.	Small.	0	1	0	0	0	0
23.	P. S.	40	Moderate.	Moderate.	0	1	0	0	0	0
24.	J. D.	30	Large.	Large.	0	1	0	0	0	0
25.	T. T.	80	Large.	Moderate.	0	1	0	0	0	0

FOURTH STAGE, NEW METHOD.

No.	Name.	Number days treated.	Bacilli.		Cured.	Much improved.	Slightly improved.	Unimproved.	Worse.	Dead.
			Before.	After.						
1.	D. A. C.	172	Large.	Moderate.	0	0	0	1	0	0
2.	C. F.	165	Large.	Moderate.	0	0	1	0	0	0
3.	T. J.	164	Large.	Not ex.	0	0	0	0	1	0
4.	G. A. K.	57	Large.	Not ex.	0	0	0	0	0	1
5.	J. M.	481	Large.	None.	1	0	0	0	0	0
6.	J. M.	365	Large.	any. Very	0	1	0	0	0	0
7.	B. M.	363	Large.	few.	0	1	0	0	0	0
8.	W. R. P.	54	Large.	Large.	0	0	0	1	0	0
9.	P. P.	235	Large.	Moderate.	0	1	0	0	0	0
10.	G. Ph.	199	Large.	Moderate.	0	1	0	0	0	0
11.	D. H.	130	Large.	Moderate.	0	1	0	0	0	0

Dr. William Thompson of Philadelphia Honored.—The Trustees of Jefferson Medical College have elected Dr. William Thompson Emeritus Professor of Ophthalmology at that institution in recognition of his services as a teacher of diseases of the eye during a period of nearly twenty-four years.

TRAUMATIC PROLAPSE OF THE IRIS AND ITS TREATMENT.¹

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EVIDENTLY no single rule of surgical conduct is applicable to each case of traumatic prolapse of the iris, and for the sake of convenience, as well as for therapeutic consideration, these lesions may be considered from the regional standpoint, *i.e.*:

I. *Cases of Prolapse of the Iris Through Wounds at or near the Corneoscleral Junction, Forming the Well-known Pouch-like Hernia.*—If seen early, that is before the anterior chamber has been reformed, owing to closure of the wound by adhesive inflammation, three courses are open to the surgeon:

1. Replacement of the prolapsed iris and the management of the case in the ordinary manner with pressure, bandage, and rest; or, in the event of failure,

2. Abscission of the prolapsed iris, precisely as in the operation of iridectomy.

If either after replacement or abscission the wound shows a tendency to gape, or is not neatly coapted, and hence the danger of re prolapse is rendered likely, the wound may be closed with one or more delicate silk sutures.

3. Compressive bandage, rest, etc., without manipulation or abscission of the iris.

Although the advice to replace the prolapsed iris, if possible, is always given, and properly so, in point of fact the opportunities to accomplish this maneuver successfully are comparatively rare, and hence practically the choice lies between an operative and non-operative procedure.

Eyes with this lesion treated without surgical interference, and which heal without infective inflammation, present an adherent peripheral leucoma and an oval, mobile pupil, and have good vision. Sometimes, indeed frequently, healing proceeds without signs of reaction; at other times there is iritis and ciliary irritation, and withal the nuisance of prolonged bandaging and protracted convalescence.

Eyes with this lesion successfully treated by abscission, with or without a stitch, according to the indications, heal with comparatively little scar and present a narrow keyhole-shaped, mobile pupil and non-adherent iris. The time required for cure, as compared with cases treated upon conservative principles, is short. An illustrative case is the following:

CASE I.—A laborer, aged twenty-four, was struck in the right eye with a chip of wrought iron, causing a small, irregular wound, beginning directly at the

corneoscleral junction in the upper and inner quadrant, and passing irregularly inward across the ciliary region for a distance of one centimeter. When examined, nine hours after the accident, the tension was minus two. Through the wound in the corneoscleral junction protruded a mass of iris and blood-clot and the face of the iris (the anterior chamber was empty) was covered with a large blood stain. Vision amounted to counting fingers at six inches. A red reflex was visible from the eye, but the details of the fundus could not be seen. After sterilization of the conjunctival sac with repeated forced flushings with a saturated boric-acid lotion, the lips of the wound were separated and all prolapsed iris and adherent clot abscised, in precisely the same manner as when the operation of iridectomy is performed. With a flat spatula, the edges of the coloboma were carefully smoothed and the incision in the sclera neatly coapted. A drop of atropin was instilled, a light, sterile bandage applied, and the patient put to bed with the following directions to the nurse: One-sixth of a grain of calomel every two hours; continuous iced compresses to the injured eye, these compresses being placed upon the folds of the gauze bandage; and rest as much as possible in the dorsal position. In forty-eight hours the wound was closed and the anterior chamber restored. At the end of ten days the patient was dismissed with a neat coloboma upward and inward, a healed corneal wound, an iris of normal color, the media clear, and vision $\frac{20}{40}$ without correcting lens. With correction of the acquired astigmatism, which will lessen, vision became still better.

This is a type of many similar cases, and represents a common experience. I cannot understand what advantage, under these circumstances, a non-operative treatment would possess.

If the case is seen late—that is, after the anterior chamber has been reformed owing to the closure of the wound by adhesive inflammation—two courses are open to the surgeon: (a) Compressive bandage, etc., *i.e.*, non-operative, or so-called conservative measures. (b) Abcission of the prolapse, freeing of the wound from adherent and incarcerated iris, paring the wound-edges, and uniting them with a suture; or, if no suture is used, allowing the wound to unite under a compression bandage. Personally, I am governed by the following considerations in the management of this class of cases: If there are no threatening symptoms and no increase in the size of the prolapse, I leave it alone; if, however, there arise irritation from bandaging, ciliary congestion, and increase in the protrusion in spite of pressure, I abscise it, and, in recent years, close the wound with a suture. The following is a case in point:

CASE II.—Joseph P., an Italian laborer, aged about thirty-five, came to the Jefferson Medical College Hospital on May 29, 1896, with a small wound in the lower corneoscleral junction,

¹ Read before the Ophthalmic Section of the New York Academy of Medicine, April 19, 1897.

through which there was a pear-shaped protrusion of the iris and sufficient adhesive inflammation to have closed the wound and restored the anterior chamber. A small amount of ciliary irritation surrounded the lesion. Vision equalled $\frac{20}{100}$. The media were clear and the fundus normal. In spite of a pressure bandage, the iris protrusion continued to grow; hence it was abscised, the edges of the wound pared, two silk sutures introduced, and the patient kept in bed for two days. He was dismissed at the end of the third day with a healed wound, restored anterior chamber, and ovoid pupil, such as one sees in a narrow, downward iridectomy. He continued as an out-patient until the wound was free from irritation, and was not again seen until February, 1897, nearly a year after the original accident, when his eye was perfectly quiet, the scar scarcely detectable, and the vision $\frac{20}{30}$ with correcting glass.

In a number of cases treated by abscission of the prolapse and suture of the wound, I have never seen anything but good results, except in one instance which represents an unusual but not impossible complication. The case has already been reported,¹ but may be briefly referred to:

CASE III.—On the 28th of February, 1896, a girl aged three and a half years, was brought to the Jefferson Medical College Hospital for traumatic hernia of the iris. The child had received an injury of the right eye from a pair of sharp scissors at the corneoscleral junction, through which there was an extensive prolapse of the iris. There was little irritation and the anterior chamber had been restored, but as the prolapse appeared to be increasing, it was abscised. The operation was followed by a smart hemorrhage which filled the anterior chamber. A pressure bandage was applied and the child was put to bed. At the end of twenty-four hours, absorption of this blood had taken place, but partly owing to the extreme restlessness of the patient, successive hemorrhages occurred, and when she was dismissed from the hospital three days later, at the request of her parents, although contrary to our advice, the anterior chamber was so full of blood that all underlying tissues were obscured. One week later there were distinct symptoms of cyclitis, a fine flush surrounding the corneal margin. Under atropin and the internal administration of small doses of calomel this condition subsided. In fact, the cyclitis disappeared, in spite of the fact that in the meantime the child was attacked with measles and passed through the ordinary phenomena of this exanthem. As early as the tenth day after the operation, and very markedly after the attack of measles, we began to notice a discoloration of the cornea. This increased until there was typical blood-staining of the cornea, which caused this membrane to assume a greenish-brown color, with the exception of a small rim, two millimeters in diameter at its circumference.

There is little doubt that the hemorrhage follow-

ing the abscission of the iris was responsible for the blood-staining of the cornea. Whether the condition would have healed promptly and favorably without operative interference is a matter of pure speculation.

II. *Cases of Prolapse of the Iris Through a Wound Extending Nearly or Entirely Across the Breadth of the Cornea, either Vertically or Horizontally.*—These cases, it seems to me, present an entirely different problem from prolapse of the iris at the corneoscleral junction; first, because the prolapse usually is more extensive; second, the underlying structures are more apt to be wounded; and third, the position of the prolapse is frequently such that a mydriatic is able to exert its most favorable influence.

If seen early—that is, before there is marked adhesion between the prolapsed iris and the edges of the wound—it may be possible to replace the iris in whole or in part and keep it in position by pressure, atropin, and dorsal decubitus. If it is not possible to replace it through the entire length of the wound, the central portions of it may be freed with the spatula, while the prolapse at the peripheral end of the wound—that is the one approaching the corneoscleral junction—may be abscised and treated in the same manner as is a prolapse entirely located in this region. These cases must be exceptional, but I have one in mind with good result.

If seen later—that is, when the iris has already become firmly adherent to the edges of the wound and the wound is at all extensive in length—I am inclined to agree with the advice recently recorded by Dr. Knapp, namely, to “treat the case expectantly as long as no threatening symptoms appear.” This treatment, I believe, should be the one already detailed, atropin, or other reliable mydriatic, rest in bed, and compressing bandage. The chief reason for it, in my judgment, depends upon the fact that, in addition to the value of pressure, the favorable physiologic action of atropin or other mydriatics upon the iris is secured in a way that is not obtained when the prolapse is at or close to the corneoscleral junction. The mydriatic rolls the iris back and tends to draw the prolapsed portion from the wound. This is proved by the fact that in many of these cases the iris is drawn out of the incision toward the central portion of the wound, while it remains clamped in the periphery where the drag upon it is less effective.

To be sure, even when the prolapse is solely located in the periphery, there is also some influence exerted by the mydriatic to withdraw the attached iris from its position, an effect, however, which is partly, if not entirely, counteracted by the equal effect of rolling back another portion of the iris toward the prolapse. For this very reason, in the

¹ *Philadelphia Polyclinic*, September 5, 1895.

peripheral cases, it has been the habit of surgeons to employ eserine, with the hope that under the influence of the contraction of the pupil the iris will be drawn from its attached position in the corneal periphery. My experience, however, is that eserine is very apt to increase ciliary irritation, and is not an acceptable drug in traumatic prolapse of the iris. I make exception of a few cases of prolapse after cataract extraction, in which I have seen it act very favorably. Moreover, abscission of an extensive prolapse across the corneal breadth results not in a small, smooth coloboma, but in a more or less unshapely loss of iris tissue. Touching this point, the following illustrative case may be introduced:

CASE IV.—Mary H., a child about one year of age, was brought to the Jefferson Medical College Hospital on March, 24, 1897, with the history that she was struck in the eye with a piece of metal attached to a window blind. The accident occurred four days before her entrance into the hospital. She had been under treatment in another institution, but the parents becoming dissatisfied, they had sought other advice. The wound extended from a half millimeter in the upper ciliary region, in a curvilinear manner, downward across the cornea, terminating a little beyond its middle. The iris was extensively prolapsed and the eyeball congested, but as far as could be seen there was no injury of the deeper structures. The treatment consisted entirely of pressure bandage and atropin, and resulted in a steady subsidence of the prolapse, so that at the present writing the eye is nearly white and quiet, with a small, non-protruding attachment of the iris near the center of the wound, with the indications that it will be entirely withdrawn into the anterior chamber, the drag on the iris by means of the atropin toward the periphery having been sufficient to draw this tissue out of the lips of the wound, except at the point mentioned.

Bacteriologic examination is an important factor in deciding whether or not there should be surgical interference in cases of prolapse of the iris seen late—that is, after closure of the wound by adhesive inflammation. As has been pointed out by Knapp, the surrounding cornea is infiltrated with micro-organisms, although the iritic tissue itself may be free from them. A case in point is the following:

CASE V.—A boy about ten years of age came to me ten days after he was struck in the right eye with a sharp stick, which cut a ragged wound at the inner side of the cornea, extending vertically across its entire breadth. The iris tissue was clamped in the wound and protruding, and a grayish line was manifest about the center of this tissue and extended somewhat into the corneal area. The lens appeared to be partially opaque.

Inoculations from the conjunctiva, which had been frequently washed with a saturated solution of boric acid by the attending physician and had been

cleansed only a short time before the inoculation was made, proved to be sterile. Inoculations from the grayish line previously described, which, it should be understood, was not in the iris tissue itself, but on the surface of the lymph which covered it, and in the surrounding corneal tissue, yielded a perfectly pure culture of *staphylococcus cereus albus*.

Although the child was brought with the expectation of operative interference, advice against reopening the wound and abscising the prolapsed iris was given. The situation of the prolapse was such that the favorable action of atropin could be obtained; there were no marked signs of bandage irritation or ciliary congestion; and opening of the wound would, it seems to me, only have liberated, as it were, staphylococci and presented to them paths for entrance into the deeper ocular structures. Hence, the advice of expectant treatment, with the suggestion that probably later the case would have to be dealt with on the principles which govern the management of traumatic cataract.

III. *Cases of Prolapse of the Iris Through a Corneal or Corneoscleral Wound, Associated with Lesion of the Underlying Structures, Generally the Crystalline Lens.*—Certainly no hard and fast rule can be given to cover all cases, which, however, naturally divide themselves into two chief classes:

1. Those cases in which the lesion is so extensive that conservation of the eye is problematical. With these instances we are not specially concerned this evening.

2. Those cases associated with injury of the lens and followed by opacification and swelling of its tissue. The urgency of the symptoms and the age of the injury must decide action. Some of these cases must be relegated to the class already referred to and illustrated by an example to which expectant and primarily non-operative treatment is suited. In others, both lesions may be dealt with at one sitting.

CASE VI.—For example, in a case not long since under my care, the wound being in the upper portion of the cornea and seen about ten or twelve days after the accident, the lens being opaque and partially protruding into the anterior chamber, a small, upward corneal section was made, the prolapsed iris seized and removed, and the soft lens-matter expressed through the wound. The primary vision, without treatment of the capsule, was $\frac{3}{30}$. Subsequently there was thickening of the capsule and the vision dropped to $\frac{2}{200}$. The patient declined to allow division of the membrane.

Such a procedure, if possible, seems to me more desirable than a primarily non-operative course, for, at all events, operation later on is sure to be needed.

IV. *Cases of Prolapse of the Iris Through a Corneal Wound, with Prolapse of the Ciliary Body or*

Process Through its Scleral Extension.—Under these circumstances, my experience coincides with that recently recorded by Dr. Knapp. The iris portion of the hernia may become quiet, or even withdrawn into the anterior chamber, while the ciliary end of the lesion forms a cyst-like protuberance. Therefore, if I see a case of this character, and it is a proper one for this manipulation, I clear the wound of all protruding ciliary tissue, if I may so express myself, and close it with sutures. These sutures are passed, however, through the conjunctiva overlying the wound and not through the sclera; at least, I am disinclined to pass them through the sclera unless absolutely sure that this can be done without inclusion of any uveal tissue in the stitch.

If the case is seen late, *i.e.*, after the cyst has formed, the latter is excised and the eye treated exactly as after abscission of pouch-like hernias of the iris already described. While it is true, as pointed out by Knapp, that prolapses of the ciliary tissues "are apt to produce cyst-like ectasias which, for their cure, require thorough excision," this rule also meets with exception.

CASE VII.—A girl, aged eleven, came to the Jefferson Medical College Hospital in the early portion of 1896, with the history that one year previously she had been wounded in the right eye with the tine of a fork. Downward and inward in the ciliary region, about four millimeters from the corneal margin, was a small, translucent, cyst-like ectasia, with dark-colored base. The eye was otherwise normal. Complaint was made of pain, watering, and photophobia of the left eye, and, apprehensive of sympathetic trouble, the patient was kept under observation for some time. She then disappeared from view, and was not again seen until the present month—more than two years after the injury, when the cyst, about the size of a small pea, was found in exactly the same condition as at her first visit. In the meantime the refractive error had been corrected, and both eyes were quiet and comfortable.

V. *Management of the Adherent, Non-bulging Cicatrix After Healing of an Iris Prolapse.*—As may have been gathered from what has been previously said, one of the chief advantages of operative interference in traumatic prolapse of the iris, under those circumstances in which I believe it to be not only justifiable, but the best procedure, is the securing of a non-adherent cicatrix. Now, although eyes which have healed without infective inflammation and without surgical interference are usually perfectly quiet, non-irritable organs, in a certain number of cases, the slight drag on the attached iris during the movements of the pupil is the cause of pain and discomfort. Therefore, I would like to add one word in regard to what I may call the treatment of the sequel of prolapse of the iris, that is, of the adherent cica-

trix. Take, for example, the case of the girl detailed, in which the iris prolapsed through a curvilinear wound extending half way across the breadth of the cornea, and was withdrawn into the anterior chamber at all points except one near the center of the scar. At this point the iris was attached and lifted up in a minute tent-like extension, the pupil below it being somewhat ovoid in shape. In cases of this character, I am accustomed to free the attached iris from the scar by the ordinary operation of division of anterior synechia. The method I prefer is the one specially advocated by Mr. Lang of Moorfield Hospital, in which an instrument not unlike the Knapp knife-needle is introduced into the anterior chamber and the synechia divided by a slight lever-like movement. The iris drops back into place, a drop of atropin solution rolls it out of danger of re prolapse, and a circular pupil is secured. It is less easy to accomplish this maneuver, when the iris is prolapsed in the periphery or angle of the anterior chamber, although it can also be done there with the same result. I have never seen harm follow this slight operation, and I have more than once seen an eye thus relieved, which had previously been persistently painful, grow comfortable and quiet.

The question of prolapse of the iris as the result of perforating ulcers of the cornea is not part of the discussion this evening, but it perhaps is not entirely out of place to say that these cases seem to me to demand the same line of treatment as the traumatic ones, and the management of the case is governed by the same principles as those already enunciated. In a few instances where the prolapse has been an extensive one and has protruded through a large, somewhat irregular opening, which could not be neatly coapted with stitches, I have very successfully planted a flap, after the manner of Gama Pinto.

In one instance, associated with the last stage of a gonorrheal conjunctivitis, I took the graft from the opposite or sound eye.¹

With reference to *prolapse of the iris as a complication of the simple extraction of cataract*, my practice is the same, I believe, as that of many surgeons, chiefly Dr. Knapp, namely: If the prolapse is discovered within a few hours after its occurrence, it is cut off and the edges of the iris reduced, exactly as after the operation of iridectomy. If the prolapse is not noted until later, for example, the third or fourth day, it is allowed to remain until the eye is quiet, when, if there is staphylomatous bulging, the protrusion is abscised, or, in other words, treated as is a staphyloma of the cornea.

In a few instances I have inserted after this operation one or two delicate silk sutures, and have been

¹ *Philadelphia Polyclinic*, 1896, vol. v, No. 14.

pleased with the result. Once I have seen the prolapse entirely reduced by the use of eserine, the iris being withdrawn into the anterior chamber and the pupil becoming perfectly circular on the sixth day after the accident.

In the beginning of this paper I said, "Evidently no single rule of surgical conduct is applicable to each case of traumatic prolapse of the iris." But if an attempt to formulate such a rule should be made, which, like all other rules, must meet with exceptions, it would read somewhat as follows: Whenever it is possible to secure clean removal of the protruding tissue operative interference is indicated; when this is not possible non-operative measures, as in the instances already described, are worthy of consideration and adoption.

THE OPERATIVE TREATMENT OF SUPPURATIVE AND NON-SUPPURATIVE MIDDLE EAR INFLAMMATIONS.¹

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I HAVE so frequently spoken upon the subject to which I now invite attention, that I feel some hesitation in making it the theme of this article. Were it not for the fact that the surgery of the middle ear is still in its infancy, I should scarcely feel warranted in so doing. Being convinced of the great value of middle ear operations, both in suppurative and non-suppurative otitis media, provided proper judgment is exercised in the selection of cases in which such procedures are to be instituted, I take the liberty of again referring to this method of treatment.

Chronic inflammations of the middle ear may be divided into two large classes, first, suppurative inflammation, and, second, non-suppurative inflammation. In suppurative inflammation of the middle ear, operative procedures are demanded for the relief either of a discharge from the ear, or of impairment of hearing which has resulted from a previous purulent process, the otorrhea having ceased spontaneously. A discharge from the ear, of long duration, which has failed to yield to milder measures of treatment, is always indicative of caries within the tympanum. The disrepute into which middle ear surgery, as applied to these cases, has fallen, is largely due to the fact that a careful selection of cases proper for operation has been neglected. When there is extensive caries within the tympanum, and

when this destructive process has extended into the mastoid cells as well, it is evident that the removal of the ossicles only, or in fact any operative procedure through the external auditory meatus, will fail absolutely to relieve the condition. Here a more radical operation, such as the Stacke-Schwartz, is demanded. In a certain proportion of cases, however, we find that the bony involvement is confined either to the ossicular chain or to those parts of the tympanum easily accessible through the external auditory canal. It is in these cases that the removal of the carious ossicles and a thorough curettement of the tympanum effects a complete cure. Statistics show that the percentage of cures following ossiculectomy is about equal to that obtained by the Stacke-Schwartz operation. When we consider that the cases included in these statistics were unselected, the value of the less radical operation is at once demonstrated. A careful reading of the published reports of cases proves that, in many instances at least, an unfavorable result was due simply to an incomplete operation. It is to be remembered that in about eighty-five per cent. of all cases of caries of the ossicles the incus is involved. In a large number of the reported cases, the remnant of this ossicle was not removed, the operator contenting himself by taking away the malleus. The carious incus was allowed to remain in the middle ear, and hence the discharge was not relieved. I have always insisted upon the importance of removing both ossicles to obtain a satisfactory result. If the incus has been partially destroyed the fragment of the ossicle remaining is often difficult to remove. Its extraction prolongs the operation, but is essential if a successful result is to be obtained.

The same rule applies to curettement of the tympanum. The operation should never be looked upon as completed after both the malleus and incus have been excised. Every portion of the middle ear accessible through the canal should be examined either visually or with the probe, and all softened areas should be thoroughly scraped with a sharp spoon. The same instrument should also be carried into the tympanic vault. Run off all softened bone in this region. Conducted in this way an intratympanic operation never fails to diminish greatly the discharge, and in a large proportion of cases, to cause its complete cessation. As the patient is under general anesthesia, there is no necessity for haste at the expense of thoroughness. In my own cases, the operation not infrequently has occupied an hour and a half, most of the time being spent in searching for a small fragment of the incus, and in curetting the intratympanic cavity until all softened bone had been removed.

¹ Read before the Southern Section of the American Laryngological, Rhinological, and Otolological Society, New Orleans, March 3d, 1897.

The technic of the operation effects the result to no small degree. If the middle ear is filled with granulation tissue, this must be removed before any attempt is made to excise the ossicles. In suppurative otitis, the lining membrane of the tympanum is exceedingly vascular, and under the most favorable conditions an incision of the tissues is followed by free hemorrhage. When granulation tissue is present, the hemorrhage may be so profuse as to entirely hide the field of operation. Considerable local treatment may be necessary, therefore, before attempting to remove the carious ossicles, although the necessity for surgical interference may be apparent from the outset. It is not possible to perform a satisfactory operation for intratympanic caries under local anesthesia. The removal of the ossicles may be effected without difficulty, but the pain incident to curetting the middle ear cannot be prevented by any local application.

The proper illumination of the field of operation is also essential, and no one should operate with a poor light. My own preference is the electric light, although an oil lamp or an ordinary gas jet will afford sufficient illumination. The objection to these last two is the possible ignition of ether vapor by the exposed flame, unless the source of light is above the patient and removed at a considerable distance. With proper precautions, however, this danger can be overcome.

The steps of the operation depend largely upon the local condition. When the membrana tympani is almost completely destroyed, and the ossicles are drawn upward into Shrapnell's membrane, the procedure is usually as follows: Any adhesions posterior to the stapes are divided by a sharp-pointed knife inserted between the head of the stapes and the tympanic ring, provided the former landmark is visible. When this cannot be seen, the knife is introduced close to the posterior margin of the tympanic ring, just above the normal situation of the stapes, and is carried inward until its point impinges upon the internal wall of the middle ear. The knife is then carried downward for a distance of about one-twelfth of an inch, completely dividing all soft tissues. After this incision, the head of the stapes will often be recognized, presenting as a small white spot close to the border of the tympanic ring, the tension of the adhesions between the anterior crus and the adjacent wall of the oval niche being sufficient to pull the ossicle forward. An angular knife is then introduced in front of the stapes to free this ossicle from the incus. The long process of the incus has usually been destroyed in these cases, but it is advisable to take this precaution to prevent the possible evulsion of the stapes

when the incus is removed. The next step is to free the malleus by the division of the anterior, posterior, and external ligaments. This is done by carrying the incision from the anterior and posterior margins of the perforation completely about the malleus over the short process. It is well to cut first in front of the malleus from the superior border of the perforation, upward to the short process, and to make a second incision, in a similar manner, posteriorly, the incisions meeting above the short process.

The division of the external ligament is somewhat difficult on account of its density. It is best effected by plunging a strong sharp-pointed knife upward and inward into the tympanic vault just above the short process of the malleus, and dividing the dense bands anteriorly and posteriorly. If the manubrium is adherent to the internal wall of the middle ear, it may be separated by the use of the angular knife.

The malleus is then grasped just above the short process, and is first pushed inward to dislodge the head from the shelf-like process upon which it rests, after which it is drawn downward and outward. Occasionally, when the caries has not been extensive, the incus may be seen as soon as the malleus has been extracted, and the hemorrhage may be controlled by cotton pledgets. The part presenting is usually the long process or the portion of it which remains. It usually lies close to the posterior margin of the tympanic ring, projecting slightly beyond this. The incus-hook is then introduced into the canal and passed behind the posterior margin of the ring, the concavity of the instrument being directed forward. The instrument is then carried upward, and at the same time is rotated forward so as to displace the incus into the field of vision. As soon as this is accomplished it is grasped by the forceps and easily removed. It is important, however, not to attempt extraction when only a small portion of the bone is visible. If the operator fails to grasp the bone firmly, it is frequently displaced into a remote corner of the tympanic vault, and it is found only with the greatest difficulty. A little careful manipulation at this stage of the operation may save a great deal of time. It should be borne in mind that the incus does not lie close to the internal tympanic wall, but near the tympanic ring, its short process resting upon a ledge of bone just above the superioposterior margin of the meatus.

Failure to extract the incus is often due to the fact that the incus-hook is passed too far into the tympanic cavity, and when rotated forward lies to the inner side of the ossicle, and consequently fails to displace it. It is better to introduce the hook just

within the tympanum and then to draw it outward until its angular extremity engages the tympanic ring. The subsequent manipulation is performed with the hook constantly in contact with this bony ring, and of necessity it must displace the ossicle if it is in its normal situation. While the hemorrhage may be rather profuse during the entire operation, it may usually be controlled by firmly packing the canal with small pledgets of cotton. These pledgets are allowed to remain in position for one or two minutes, and when removed the field of operation is usually found to be perfectly dry. The deepest plug may be pressed firmly against the internal wall of the middle ear without danger of displacing the stapes, the walls of the oval niche sufficiently protecting the ossicle.

To thoroughly remove carious bone from the tympanic vault, curettes of various sizes are necessary, the cutting portion of the instrument being placed at right angles to the shank. These curettes are made to cut both forward and backward, and should be used freely in every portion of the tympanum not visible through the speculum. The internal wall of the atrium should also be thoroughly curetted. Here the sense of sight aids us in discovering the carious areas.

It is to be remembered, even in the selected cases, that the surgeon should not give a too favorable prognosis as to the complete suppression of the aural discharge following such an operation. He can certainly promise that the discharge will be greatly diminished in quantity, and will be so slight as to cause no inconvenience; and he may confidently anticipate a complete cure in many instances if due care is taken to operate only on suitable cases. One of the most important arguments in favor of such a procedure is the establishment of perfect drainage through the external auditory canal. For this reason, intracranial infection cannot occur, and the danger incident to the suppurative process within the middle ear is then entirely avoided. I append the statistics of my own operations:

Operations for Otorrhea.—Ossiculectomy, 61 cases. Cured, 35; improved, 17; under treatment, 1; result unknown, 8; hearing made worse in a single case. Stacke-Schwartz operation, 10 cases. Cured, 6; improved, 4.

The effect of such an operation upon the hearing must always be taken into consideration, and no patient should be subjected to operation until a careful functional examination has been made. In a few instances the hearing has been impaired by the operation; in the great majority, however, the hearing is very greatly or moderately improved, or remains the same as before operative interference. The following statistics show the results obtained in

my own cases: Operations for improvement of hearing when slight otorrhea was present, 26 cases. Ossiculectomy performed in 22 cases. Improved, 17; unimproved, 5. Synechiotomy performed in 4 cases, all improved.

A certain proportion of cases is met with in which the suppurative process has undergone a spontaneous cure, and the surgeon is consulted as to the possibility of improving the function of the organ. Some of the most gratifying results obtained in aural surgery follow operative interference in these instances. The intratympanic condition is very similar to that found in hyperplastic inflammation of the middle ear. When a functional examination shows that the perceptive apparatus has not been involved secondarily, the hearing can almost certainly be improved by the division of adhesions which interfere with the mobility of the ossicular chain. In this connection it is to be remembered that any increased tension in one ear will sooner or later impair the function of the other. For this reason it is the imperative duty of the otologist to relieve the tension of the conducting apparatus in order to preserve the integrity of the opposite ear. Ordinarily the tension can be relieved by exceedingly simple measures, and the removal of the two larger ossicles and of the remnant of the drum-membrane is seldom necessary. My own rule in these cases is first to divide any adhesions between the posterior crus of the stapes and the adjacent wall of the oval niche. The stapes should then be completely separated from the long process of the incus either by disarticulation at the incudostapedial joint, if this is still intact, or by division of connective-tissue bands which may have formed after the disintegration of the descending ramus of the incus. The stapes is freed from adhesions, above, below and in front, and is cautiously mobilized by pressing it in various directions with the cotton-tipped probe. In attempting to mobilize the stapes, any undue violence must be avoided as the crura may be easily fractured if too much force is employed.

The transmission of sonorous vibrations to the labyrinthine fluid can only take place when both the stapes and the covering of the round window are fairly movable. Although the stapes may be mobilized, sound perception may still be absent. The same process which has caused the rigidity of the stapes may have produced a similar condition of the membrane of the round window. To restore the integrity of the apparatus these adhesions must be divided. To do this, an angular knife is passed into the niche of the round window and is then rotated from below upward so as to sever any adhesions which may be present. Firm pressures upon the

knife is necessary in order to accomplish the desired result. There is no danger of wounding the membrana tympani secundaria as, from its position, it lies in nearly the same plane as the blade of the knife.

While the procedure, as described above, may seem visionary, the results obtained constitute the proof of its practical value. I would not be understood as saying that it is possible in every case to secure a favorable result by a single operative procedure. In order to restore the equilibrium of the stapes and to enable it to perform its function in the best possible manner, repeated operations may be necessary. It is important to test the hearing frequently in order to ascertain the result of each successive synechiotomy. In connection with the quantitative tests it is also important to determine the lower tone limit, as this should fall steadily as the conducting apparatus is rendered less rigid. Operative procedures about the stapes may immediately be followed by an impairment of the hearing on account of the formation of blood-clots, or because of the reaction incident upon such measures. A considerable interval should therefore be allowed to elapse before the patient is subjected to a second operation in order that the parts may return to their normal condition.

Great patience on the part both of the surgeon and the patient is necessary to secure a successful result; but if this rule is followed both will feel amply repaid for their persistence.

The author's results are as follows:

Otitis Media Purulenta Residua.—For improvement of hearing, 20 cases. Synechiotomy performed in 18—17 improved, 1 unimproved. Ossiculectomy performed in 2 cases—1 improved, 1 unimproved.

In conjunction with operative measures, it may not be amiss to call attention to the mechanic treatment of defective audition in the residual suppurative cases. This term includes those cases in which the suppurative process has run its course and has undergone spontaneous cure. We have then simply to deal with the results of a former suppurative process instead of an active purulent inflammation.

The author claims no credit for original investigation in this line. The use of certain mechanic devices to replace the drum-membrane was employed by the earlier otologists. So far as I know, Dr. Clarence Blake of Boston was the first to use a pledget of sterilized cotton moistened in borated vaselin for this purpose. In many of the residual suppurative cases, when a small perforation exists in the lower portion of the drum-membrane, or when there is a perforation of considerable size in the

posterior and upper quadrant which exposes the head of the stapes, the hearing can often be improved by the application of a pledget of sterilized cotton in such a way as to either close the perforation or to press upon the head of the stapes. In the latter instance the efficacy of the cotton disc depends upon the presentation of a larger surface to the sound vibrations, in this way augmenting the impulse conveyed to the labyrinthine fluid. In many cases the improvement following the use of this simple device is astonishing. It would at first seem that the patient must be constantly under the care of the surgeon in order to derive any benefit from this method of treatment. The patient himself, however, soon learns to apply the cotton pledget. As soon as he is conscious that the pledget has become displaced he syringes the ear, removing the former pledget, and then inserts a new one, the increased power of audition enabling him to recognize the fact that the artificial drum is correctly placed. In fact, patients who have followed this treatment for some time become more expert in executing this manipulation than the surgeon himself.

When we come to the consideration of the non-suppurative form of the inflammation, and the operative measures which are deemed advisable for its relief, the same care must be observed in making a proper selection of cases subjected to operation. I am not infrequently requested to operate upon an ear because it is absolutely worthless and consequently cannot be injured. Unfortunately, many accept this view in selecting their operative cases, and it is for this reason that middle ear surgery has so few advocates. No argument seems necessary to prove the utter absurdity of such a practice. A careful functional examination will always enable the surgeon to determine whether the labyrinth is involved or whether the disease is confined to the middle ear. In the former instance surgery is of no avail; in the latter it almost invariably promises a certain amount of relief. In a few cases the results of functional examination may not be conclusive, and in such an event it is always advisable to open the tympanic cavity by turning down a flap of the drum-membrane so as to ascertain the extent of the middle ear lesion, and to determine to what degree it causes the impairment of function. Such an operation is easily performed under cocaine. A large flap of the membrana tympani may thus be reflected downward and forward, exposing the upper posterior quadrant of the tympanum. The stapes may be separated from the other elements of the ossicular chain and freed from adhesions in the manner already described. If the tests are repeated, we are able to exactly determine the importance of the

middle ear lesion; if there is no improvement, the flap may be replaced and the ear restored to its original condition. On the other hand, the labyrinthin involvement may be of less importance than was at first supposed, in which case the two larger ossicles, together with the membrana tympani, may be removed and the improvement following the exploratory tympanotomy be maintained.

An example of this occurred in one of my own cases. The history of the case led me to believe that the labyrinthin involvement—of which there was decided evidence on functional examination—was dependent upon a pre-existing middle ear lesion. After an exploratory operation, the hearing was markedly improved, and on the following day the operation was completed. The result was eminently satisfactory. The hearing in the ear operated upon was considerably improved, while the effect upon the opposite ear was even more noticeable. Before the operation, the impairment in hearing had been so considerable as to deter the patient from performing his ordinary social duties. At the present time he experiences no difficulty in mingling in society, and the slight impairment in hearing from which he suffers is not apparent.

Any inflammatory reaction following an exploratory tympanotomy invariably results from imperfect technic. With a sterile field of operation, clean instruments, and proper attention to asepsis during the operation, no inflammatory reaction occurs. If the operation is to be completed, *i. e.*, both the membrana tympani and the two larger ossicles removed, the technic is, briefly, as follows: A small pledget of sterilized cotton saturated in a sterilized twenty-per-cent. solution of cocain is introduced through the exploratory opening to secure anesthesia. When the parts are no longer sensitive, a sharp knife is made to puncture the drum-membrane at its inferior pole, close to the tympanic ring. A blunt-pointed knife is inserted through this perforation, and the membrana tympani is divided anteriorly as close to its attachment to the ring as possible as far as the anterior fold. If perfect anesthesia has not been obtained, the operator should immediately stop and apply a cocain solution to the margins of the incision so that the procedure will be entirely painless. The drum-membrane is then divided in the opposite direction until the entire membrana tensa is detached from the tympanic ring. It is then wise to insure complete anesthesia of the upper portion of the tympanic cavity by several applications of cocain by means of a cotton-tipped probe. By winding the cotton firmly upon the applicator, and then bending the pledget at a right angle, it is possible to introduce the instrument for a considerable distance into the tympanic

vault, so that the division of the deeper tissues may be accomplished without pain. The probe-pointed knife is then introduced just below the posterior fold and is carried upward, dividing the posterior ligament and the posterior part of the external ligament. In the same manner the attachments to the malleus are divided anteriorly. It is seldom possible to unite these two incisions above the short process of the malleus, a small strip of the membrana flaccida still remaining intact. To completely free the ossicles, it is most frequently necessary to carry a strong, sharp knife upward and inward into the tympanic vault, directly over the short process, dividing the remaining fibers of the external ligament and the overlying part of Shrapnell's membrane. In some instances the tensor tympani muscle will displace the malleus forward as soon as these ligaments have been divided, and render its seizure with the forceps difficult. In such an event, an angular knife should be introduced behind the shaft of the malleus, and made to sever the muscle by rotating the instrument backward. The ossicle is then grasped near the short process with a pair of strong forceps, and extracted in the manner previously described in detailing the technic in suppurative cases. The incus is then removed, as already stated, this step of the operation ordinarily being less difficult than in suppurative cases. After thoroughly drying the parts, the usual dressing is applied.

After an operation upon the middle ear, it is impossible to prevent the formation of a blood-clot within the tympanum. In suppurative cases the presence of the clot interferes with free drainage, and in non-suppurative cases acts as a foreign body, causing a certain amount of inflammatory reaction. To avoid the formation of a clot, a long, narrow pledget of cotton should be carried into the meatus as far as the fundus. This will act as a drain, and prevent the accumulation either of blood or of inflammatory products within the canal. The distal extremity of the pledget is folded upon itself at the entrance of the meatus, so that it cannot be displaced by the patient. The canal is then occluded by a large pledget of sterilized cotton. As soon as this becomes saturated, it may be changed by an attendant, or even by the patient himself. The deep drain is removed twenty-four hours after operation. The canal will then be found to be perfectly free, and all portions of the middle ear can easily be seen upon speculum examination. It is seldom necessary to introduce the deep drain a second time, all hemorrhage usually having ceased at the end of twenty-four hours. I consider this procedure as one of great importance, both in suppurative and non-suppurative cases.

It is wise to change the dressing daily until the middle ear is perfectly dry. In many cases, however, this is impossible, and an interval of two or three days may be allowed to elapse between the dressings. The only possible accident which may occur is the infection of the middle ear through the canal. To avoid this, all instruments used in dressing the wound should be carefully sterilized. If the walls of the meatus are covered with a serosanguinous discharge, they should be thoroughly dried by means of cotton pledgets, after which the canal is wiped out with a solution of bichlorid of mercury in alcohol, of a strength of 1 to 3000. A little boric-acid powder is then dusted over the walls of the meatus to maintain the parts in an aseptic condition, and to counteract the possibly injurious effects of heat and moisture following the occlusion of the canal. Ordinarily, the reaction following the operation disappears at the end of four or five days, the middle ear being perfectly dry and the mucous membrane presenting no evidences of hyperemia. The precautions alluded to in the early part of this paper are to be observed in order to avoid any possible danger of infection.

The results obtained in my own cases are given below:

Chronic Non-suppurative Otitis Media.—Removal of malleus, incus and drum-membrane, and mobilization of stapes: Cocain operations, 46: Greatly improved, 26; moderately improved, 14; unimproved, 6. Ether operations, 13: Greatly improved, 2; much improved, 5; moderately improved, 5; unimproved, 1. Total, 59 operations; improved, 52; unimproved, 7.

CLINICAL MEMORANDUM.

REPORT OF AN OPERATION FOR THE RELIEF OF COMPLETE PROCIDENTIA OF THE UTERUS AND BLADDER.¹

By H. O. WALKER, M.D.,
OF DETROIT, MICH.

MRS. I. ST. C., aged thirty-two years, weight 90 pounds, was admitted to St. Mary's Hospital, Detroit, January 3, 1897, with the following history: Her father and one sister died of consumption; the remainder of the family are healthy. At the age of fifteen she was married, and a year later gave birth to a child, which died at the age of six months. Shortly after the death of the child she contracted syphilis, again became pregnant, and aborted at the end of the fifth month. In her eighteenth year she joined a circus, and did a great amount of horseback riding and trapeze performing, which line of work she followed

for two seasons, then being compelled to discontinue it on account of severe pelvic pains. There was marked dysmenorrhea and painful defecation, together with occasional attacks of diarrhea. For the past fourteen years she has followed the avocation of waitress and seamstress. She had acquired the opium habit, taking as much as half an ounce of the tincture during twelve hours for the relief of rectal tenesmus.

Physical examination revealed a complete prolapsus of the uterus and bladder, and an exaggerated rectocele. The labia majora were greatly enlarged and of a dense fibrous feel, the condition probably being that known as syphilitic elephantiasis. The labia minora were also considerably hypertrophied. There was an eversion of the rectum, and a fistula upon the right side extending into the rectum about two and one-half inches from the anus. At this point there was present also a rectal stricture which scarcely admitted an ordinary sized lead-pencil. The sur-

FIG. 1.



Complete Procidentia of Uterus and Bladder. Before operation.

rounding parts were greatly excoriated by the discharges from the rectum and fistula. Figure No. 1 gives a fair representation of the condition.

On January 13th, I operated in the following manner: First, I performed vaginal hysterectomy, which necessitated the greatest care to avoid wounding the bladder or rectum. No clamps were used, the arteries being tied with catgut as they presented. I then dissected up the thickened mucous membrane and removed it by elliptical incisions, commencing at the meatus above and keeping close to the labium on each side down to the upper border of the everted rectum. The cut edges were approximated with interrupted silk-worm-gut sutures, leaving an opening two-thirds of the way down for such drainage of the peritoneal cavity as might be necessary. Forcible dilatation, with proctotomy of the rectal stricture, was then done,

¹ Abstract from a paper on "Abdominal Surgery with Specimens," read at a meeting of the Michigan State Medical Society, held at Grand Rapids, May 13, 1897.

and all the parts except the peritoneal cavity were liberally irrigated with 1-1000 bichlorid solution, then thoroughly dried with sterilized gauze, the rectum packed, and the usual dressing applied and held in position by a large sized T-bandage.

Owing to the frequent evacuation of the bowels and the necessity for catheterization, the frequent removal of the dressings and their reapplication was required. The drainage tube was removed on the third day. The future history of the case was uneventful, the temperature never going above 100° F., at any time. At this writing the patient is able to walk about and do light work, the only trouble being some rectal incontinence. Liberal administration of the iodids was resorted to at intervals during the progress of the after-treatment.

Two methods of surgical treatment presented themselves as being applicable to the relief of this poor woman's condition, namely, the one adopted, and the other an ab-

FIG. 2.



Complete Procidentia of Uterus and Bladder. After operation.

dominal section and the fastening of the uterus to the abdominal wall. I questioned the feasibility of the latter method, owing to the numerous adhesions existing and the extensive hypertrophy of the parts. The method resorted to has certainly justified the effort. Figure No. 2, from a photograph taken about a month ago, represents her present condition.

MEDICAL PROGRESS.

The Results of Kocher's Operation for Hernia.—In the *Centralbl. für Chirurgie*, May 15, 1897, KOCHER gives the results obtained by himself and his assistants in 197 operations for the radical cure of hernia. In the operation, as performed by him, the cord at its exit from the external ring is separated, and after division of the cre-

master and the tunica vaginalis, the sac is isolated as high up as possible, and is drawn outward through a small opening in the fascia of the external oblique muscle one-half an inch above Poupart's ligament and one-half to one inch externally to the region of the internal ring. If the sac is large, and on account of its funnel shape a recurrence is feared, a small opening is made into the peritoneal cavity to the outer side of the internal ring, and a curved clamp is passed through this opening and down to the lowest limit of the sac. When it is withdrawn, the sac is inverted like the finger of a glove and drawn outward through the incision, tied, and cut away. The incision is closed by a couple of stitches through muscle fascia. Of the 197 cases operated upon, primary union was obtained in 91.3 per cent. All but twenty of the patients were over fifteen years of age. Of 111 cases, which could be followed, there were four recurrences, that is, 3.6 per cent. No patient died from the operation.

Vitality of the Uterine Mucous Membrane.—JUNG (*Centralbl. für Gynäk.*, May 8, 1897) had an excellent opportunity to observe the remarkable vitality of the mucous membrane of the uterus in the case of the wife of a man treated for gonorrhea and syphilis. She had had seven children and four miscarriages, and on account of profuse and repeated hemorrhages, her uterus was curetted and touched with carbolic acid. The good effects of this treatment had worn off in a month, and the cervical canal was dilated and the cavity of the uterus filled with a paste made of one part of chlorid of zinc and two parts of rye flour. The result apparently was a perfect one, the treatment reducing the size of the uterus, and obliterating the cervical canal. However, in three-months' time the patient was back again complaining of the same old trouble. The uterus was then removed, and examination of its nearly obliterated cavity showed a regeneration in part of its mucous membrane, the new epithelium showing the same pathologic changes as the old layer.

Stone in the Bladder Broken Spontaneously.—SEVEREANU (*Centralbl. für Chirurgie*, May 8, 1897) mentions a unique case in which a stone in the bladder was broken spontaneously. The patient was a man, aged eighteen, who suffered from his second until his ninth year from symptoms of stone in the bladder. From his ninth year until three months before his entrance into the hospital, he was perfectly well and could run and ride without the least pain. One night he fell into a grave and experienced immediate and severe pain in the lower part of the abdomen with a return of the old bladder symptoms. There was no blood in the urine.

By examination through the rectum, and by means of instruments, the bladder was found to contain at least two calculi which moved one upon the other. Suprapubic cystotomy was performed and the two halves of a calculus, which together weighed about an ounce, were removed. Each presented a broken surface which fitted exactly into that of the other half so that there was no doubt that a single stone had been broken into two parts by the fall, possibly, as a result of a powerful contraction of the bladder. The calculus was composed of urates.

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OF MEDICAL SCIENCE.

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SATURDAY, JULY 3, 1897.

THE BILL BEFORE CONGRESS ABOLISHING ANIMAL EXPERIMENTATION IN THE DISTRICT OF COLUMBIA.

THIS is not the official title of Senate Bill No. 1063, but indicates the intent of its originators in framing it, as well as the practical effect of its execution. The bill, as originally worded and in its present form before Congress, has all the silky softness of a kitten's paw to the casual observer; but sharp and vigorous claws lie concealed within its insinuating fairness, which await only the legalization of its provisions to assert themselves in their destructive work. The measure is entitled "A Bill for the Further Prevention of Cruelty to Animals in the District of Columbia," and it is in this harmless guise that the Humane Society of Washington is endeavoring to usurp to itself the power of controlling all animal experimentation, not only in the Government laboratories, but also in those of the medical schools and of private individuals. The advocates of the bill are most specious in their arguments in favor of abolishing imaginary cruelties of a most horrifying character and preventing their occurrence by means of carefully issued licenses and a system of regular and

irregular inspection. The harmful character of the bill, as an entering wedge in the hands of visionary enthusiasts destined to prevent all animal experimentation, and so striking at the root of all progress in organic medicine, has been clearly pointed out by the scientific members of the medical profession resident in the city of Washington. This view of the measure has been confirmed by numberless memorials to Congress from all the prominent medical and scientific gatherings which have convened in this country for the last two years, and yet the measure is constantly gaining in strength and steadily approaching the goal of its final passage. It is one of the many illustrations of the fact that a small association of persistent individuals, especially if it contains within its number a few visionary women, can, by gaining the adherence of two or three strong advocates, carry almost any measure through any State Legislature or even through the National Congress, unless it is met and opposed by some scheme of what is known as practical politics. "Practical politics" means the control of a certain number of votes.

Up to the present time, the great brotherhood of medicine and allied sciences has rested upon the belief that its opinions carried weight with the politicians, because it believed the politicians had respect for the opinions of men who must know more upon the subject under discussion than anyone else. Medical societies have therefore contented themselves with simply embodying their opinion in the form of resolutions and presenting them to Congress. It is becoming daily more clear, however, from the progress of this matter, that he who counts upon a politician taking up a cause and throwing the weight of his influence and effort into the fight in its behalf, is certainly reckoning without his host. Sad though the conclusion may be, there no longer exists in our legislative halls a single champion of truth for truth's sake, or of justice for the sake of right. The sooner the medical profession acts in accordance with this understanding, the sooner will it be able to accomplish its end, in caring for the welfare of the community as well as its own safety and progress. Every question before Congress must be put upon the basis of practical politics. In the question at issue, the medical profession is practically unanimous in its opinion of the harmfulness of the pending measure. The only way to make that influence tell, is for

each and everyone of the one hundred thousand physicians in this country to write a letter to his representative and senator in Congress, notifying him that the medical profession takes issue with every representative or senator who does not oppose by his voice and vote this harmful bill. Certainly, there is no question before Congress designed to come home personally to each member of the profession in so harmful a way as this one. The touchstone of his support in the re-election of a member of Congress should be the attitude that member has exhibited toward this bill, and every candidate should be made to know and feel it.

This is a question in which no personal jealousies need enter. Now is the opportunity for the profession to stand shoulder to shoulder for once in a persistent and consistent fight until the desired end is won. Let the country and the world witness a united effort by the whole body of the medical profession to insist upon the right which they feel is theirs, and in the enjoyment of which rests the progress of medicine, and future struggles of this nature will be less arduous and less prolonged.

BALDNESS, TUBERCULOSIS, AND ARSENICAL INTOXICATION.

In November, 1896, the attention of the readers of THE MEDICAL NEWS was directed to Sabouraud's studies of alopecia areata. In their course he was led to the investigation of other forms of loss of hair, and now in the *Annales de Dermatologie et de Syphilographie*, 1897, viii, 257, he gives us a most original and valuable paper on ordinary alopecia. He believes that the same microbe he found as the probable cause of alopecia areata is the cause of ordinary alopecia. This is an unexpected discovery, but he is so sure of his ground that he ventures to say the same microbe is the cause of loss of hair under all conditions, though he would doubtless except accidental causes. He is free to admit that there are still many unanswered questions in regard to loss of hair which the discovery of his microbe does not answer, but he thinks the answer will be forthcoming in due time.

The course of events in the production of cavities is as follows: There is an invasion of one or more hair-follicles by the microbe which develops its peculiar nest below the surface of the skin and above the

opening of the sebaceous gland into the hair-follicle. Its presence excites the sebaceous gland to a more active production of sebum, in consequence of which there are found upon the scalp the fatty plates so well recognized as seborrhea sicca. At the same time an inflammation takes place about the hair-follicle, the nutrition of the hair is interfered with, and after a time the hair is shed. The growing new hair may push out the microbial nest, and no permanent damage be done. Should a second infection of the follicle take place, permanent damage is apt to result, the follicle producing hairs of lesser and lesser diameter, until at last the papilla is destroyed. Follicle after follicle becoming diseased, we have the well-recognized bald patch. After years, the microbes in the follicles undergoing a steady increase in number, and the inflammation becoming chronic, atrophy of the scalp results, with a smooth, varnished bald head as a sequel. Unless the progress of events is checked by energetic treatment, permanent destruction of the hair is certain.

The author explains the different clinical pictures of alopecia areata and of alopecia vulgaris by assuming that in the former all the follicles of an area are affected, while in the latter only a follicle here and there is invaded. These investigations of Sabouraud deserve repetition by other observers, and without doubt will receive their deserts. While some of the phenomena of loss of hair are explained by his findings, it seems to me that some of his dicta are too sweeping. What with Sabouraud's findings and those of other observers, the preponderating influence of seborrhea or seborrheal dermatitis in the production of baldness must be recognized in the near future. This being established as a fact, it must follow that the occurrence of dandruff will be taken out of the category of slight and trivial ailments that are to be left alone, and the importance of active antiparasitic treatment of all such cases will impress itself on doctors as well as laymen, greatly to the benefit of the growing generations.

The medical mind has of late become actively engaged with the question of tuberculosis. While all physicians are aware that the tubercle bacillus invades the lungs and gives rise to pulmonary tuberculosis, there are comparatively few who dream of the number of diseases of the skin which are due to the same cause. Hallopeau (*Annal. Derm. et Syph.*,

1896, vii, 1007) says that the reason there are so many varieties of tuberculosis of the skin is found: In the complex structure of the skin, the different elements of which react differently under the influence of tuberculous infection; in idiosyncrasy of patients, and in the differences of the infective agent, whether it is the bacillus or some form of toxin developed from it. He describes the following tuberculous affections: Tuberculosis verrucosa cutis, anatomic tubercle, tuberculous gumma, tuberculous tumors, tuberculous ulcers, tuberculosis suppurativa, lupus vulgaris and erythematosus and lupus pernio. Besides these diseases, due more or less directly to tubercular infection, there are a number of dermatoses which occur in tuberculous subjects, such as lichen scrofulosorum, acne scrofulosorum, tuberculous erythemas, and a group of diseases recognized by the French under the title *folliculites suppuratives disséminées ou agminées*. In the limited space at my command, I can only draw attention to the subject, leaving the reader to consult for more detailed information the most recent treatises on dermatology.

The drug most extensively prescribed without discrimination by general practitioners in the treatment of skin diseases is arsenic. The more a man knows about dermatology, the less he uses arsenic. Like a host of drugs, it has at times disagreeable incidental effects. L. Nielsen, writing about arsenic (*Monatshefte f. prkt. Dermatol.*, 1897, xxiv, 137), says that arsenical pigmentation is one of the earliest and best known of the incidental effects, showing itself as brown spots, either occupying the sites of the lesions of the disease for which it was administered, or without any previous eruption. In the latter case it is often combined with other symptoms of intoxication and with keratosis. The pigmentation may occur both with acute and chronic poisoning. Idiosyncrasy exercises great influence in its production. It may appear after weeks, months, or years of more or less continued ingestion of the drug, the amount necessary to cause it varying greatly. Erythema often precedes its appearance. It may begin as very small round pigmented spots, or as coin-shaped, more or less sharply defined macules, and most often is widely diffused. The color may be dirty gray, but is usually some shade of brown. It is most pronounced about the neck and those regions physiologically most pigmented.

The affected parts are at the same time dry, rough, and scaly. The mucous membranes may be affected. It usually disappears a few weeks or months after stopping the drug, but it may continue indefinitely.

Keratosis comes on usually after prolonged use of the drug, and is more frequent in men than in women. It is symmetrical, and usually involves both the palms of the hands and soles of the feet. It may be diffused over the whole palm or sole and spread along the sides of the toes and fingers, though the middle of the palm and the concave part of the sole may be spared. Exceptionally it may affect the back of the hand or foot. Patches have occurred on the breast and abdomen, and between the shoulder-blades. Corns constitute the localized form of keratosis. They are multiple, numerous, small, diffused, or crowded together. They occur in the same locations as do the diffuse form. They are hard and warty-like, yellowish brown or darker. Keratosis may be combined with erythema, itching, hyperidrosis, deformity of the nails, or symptoms of inflammation. Epitheliomata may develop either from the corns or the diffused keratosis.

GEORGE THOMAS JACKSON, M.D.

ECHOES AND NEWS.

New Volume of Hare's System of Practical Therapeutics.—Messrs. Lea Brothers & Co. announce that a new volume of Hare's System of Practical Therapeutics will be issued shortly.

Dr. Charcot's Statue.—The statue of Dr. Charcot by the sculptor Falguière is nearly finished, and will soon be erected in the Salpêtrière Hospital, where Charcot made his experiments on hysteria and hypnotism.

Obituary.—Mr. J. Greig Smith, M.B.C.M., F.R.C.S., professor of surgery in University College, Bristol, England, died suddenly from pneumonia June 1st. Mr. Smith was known in America by his classic book upon abdominal surgery.

The First International Exhibition of Dentistry and Dental Surgery.—An international exhibition of dentistry, dental surgery and hygiene, under the auspices of a committee having among its number many competent experts, will be held in September at the Marlborough Hall, Polytechnic Institute, Regent Street, London.

Yellow Fever at New York Quarantine.—Isolated cases of yellow fever are constantly being discovered on ships from Central American ports. Ten cases have occurred during the past two months. The careful quarantine pre-

served in New York harbor has been successful in preventing any cases entering the country.

Address in Medicine at Yale University.—The annual address in medicine before the Medical Department of Yale University was delivered on June 29th at New Haven, Conn., by Dr. William M. Polk of New York. The subject of the address was "How to Work." In the evening a reception was tendered Dr. Polk by the faculty of the university at the residence of Professor William H. Carmalt.

Ice Cream as a Cure for Hiccough.—A serious case of hiccough in a boy, aged seventeen years, living in Westchester County, N. Y., has recently been reported. After resorting to various approved remedies without success for two weeks, the attending physician prescribed ice cream *ad libitum*. After two days of this treatment the hiccough ceased, and the patient gradually recovered from his emaciated condition.

An Autopsy Club in Chicago.—It is reported that a club has been formed in Chicago, the *sine qua non* of whose membership is that each member when he dies shall leave his brain to be thoroughly investigated by the active members of the organization. It has been suggested that the deep mystery that has hung over the mental operation of Chicago people promises to be swept away, in the course of time, by this system of investigation.

Colorado's Contribution to the Rush Monument Fund.—Colorado has already fulfilled the pledge for a \$2000 contribution to the Rush Monument Fund, made by Dr. Graham at the meeting of the American Medical Association at Philadelphia. At the meeting of the State Medical Society, June 15th, the full sum pledged by Dr. Graham was immediately raised by individual subscriptions, offered most generously and with great enthusiasm.

A Memorial to Dr. Samuel Fisk Green.—A hospital erected to the memory of Dr. Samuel Fisk Green, a brother of the Hon. Andrew H. Green of New York, has recently been opened on the island of Caradive, Ceylon. Dr. Green resided in Ceylon for twenty years, during which time he published a series of elaborately illustrated works, now the standard medical literature in the Tamil language. The opening of this hospital and the introduction of modern methods mark the beginning of a new epoch in the history of medicine of that country.

Mississippi Valley Medical Association.—The next meeting of the Mississippi Valley Medical Association will be held in Louisville on October 5, 6, 7, and 8, 1897. The president, Dr. Thomas Hunt Stucky, and the chairman of the Committee of Arrangements, Dr. H. Horace Grant, promise that the meeting will be the most successful in the history of the Association, and this promise is warranted by the well-known hospitality of Louisville and Kentucky doctors. Titles of papers should be sent to the secretary, Dr. H. W. Loeb, 3559 Olive street, St. Louis.

Announcement.—A letter from the Secretary-General of the Twelfth International Medical Congress to Dr. A.

Jacobi, the Chairman of the American National Committee, conveys the following information, which is additional to that which has been published in the medical journals: As it is too late to send tickets to the American congressists, they are requested to send to the Secretary-General at Moscow their addresses in London, Berlin, Vienna, or Paris, or to avail themselves of the National Committees in those cities, in order to receive their tickets and free passes over Russian railroads in those places. The free passes are valid from July 13th to September 13th over the following routes: Eydtkunen to Moscow and back; Moscow to Petersburg, or Moscow to Graniza, or Moscow to Odessa; or *vice versa*, Graniza to Warsaw, or Moscow, and return by Moscow to Petersburg (or Odessa, or Eydtkunen, or Ungheni, or Alexandrow), or *vice versa*. Different lines going and returning may be chosen, and stop-over is permitted. Eydtkunen to Petersburg is excluded from the free list.

Bacteriologic Examinations of the New York City Board of Health.—In order that the value of bacteriologic examination of the sputa may be at the service of physicians in all cases not under treatment in hospitals, the Health Department is prepared to make such bacteriologic examinations for diagnosis, if samples of the sputa, freshly discharged, are furnished in clean, wide-necked, stoppered bottles, accompanied by the name, age, sex, and address of the patient, duration of the disease, and the name and address of the attending physician. Bottles for collecting sputa, with blank forms to be filled in, can be obtained at any of the drug stores now used as stations for the distribution and collection of serum tubes for diphtheria cultures. After the sputum has been obtained, if the bottle, with the accompanying slip filled out, is left at any one of these stations, it will be collected by the Department, examined microscopically, and a report of the examination forwarded to the attending physician free of charge. The blank accompanying the sample should be fully filled out in every case.

Health Reports.—The following statistics concerning smallpox, yellow fever, cholera, and plague, have been received in the office of the supervising surgeon-general of the U. S. Marine Hospital Service, during the week ending June 26, 1897:

SMALLPOX, UNITED STATES.			
		Cases.	Deaths.
Toledo, Ohio.....	May 1-31	11	2
Memphis, Tenn.....	May 1-31	7	..
"	June 12-19	5	..
Pensacola, Fla.....	June 12-19	1 (varioid)	..
New York.....	June 12-19	..	3
Gloucester, Mass.....	June 12-19	..	1
Cambridge, Mass.....	June 12-19	..	1
Brooklyn, N. Y.....	June 12-19	2	..
CHOLERA.			
		Cases.	Deaths.
Bombay, India.....	May 18-25	..	4
Calcutta, India.....	May 8-15	..	69
YELLOW FEVER.			
		Cases.	Deaths.
Rio de Janeiro, Brazil...	May 8-29	29	14
Havanna, Cuba.....	June 10-17	251	40
Sagua la Grande, Cuba..	June 5-12	24	..
Cardenas, Cuba.....	June 5-12	3	..
PLAGUE.			
		Cases.	Deaths.
Bombay, India.....	May 18-25	..	56

The Recent Smallpox Outbreak in Chicago.—One death from smallpox—that of a woman who had never been vaccinated—occurred in Chicago last month. Notwithstanding the fact that hundreds of persons were exposed to the disease during the highly contagious stage, only six contracted it. This would seem to illustrate the almost perfect vaccinal protection of the population of Chicago and the importance of maintaining the present system of continuous, unremitting vaccination. The work of Chief Medical Inspector Garrott and his corps of vaccinators should also be mentioned. Every person within a radius of several blocks of each infected house was immediately vaccinated or revaccinated; nearly 5,000 packing-house employees were similarly treated as a result of one case which occurred in the packing-house district, as well as the crews of trains running south into Texas and the Gulf States, the first case having been that of a cook on a dining-car which arrived in Chicago from the City of Mexico. Dr. Garrott employs the glycerinated vaccine lymph, not alone for prophylactic purposes, but because it has a modifying effect on the character of the disease if the latter develops. He has also adopted the practice of daily vaccinations until “it takes”—instead of every second or third day—and expects modifying effects even after seven-days’ exposure. Fluid lymph was adopted by the department in August, 1895, after a systematic bacteriologic and clinical examination of all samples of vaccine then in use. It is an emulsion of vaccine lymph in glycerin, stored in sealed glass tubes, each tube containing material for one vaccination. Its use is followed by typical results with a diminution of the usual inflammatory vaccine vesicle, less constitutional disturbance, and freedom from suppurating sores, inflamed glands and lymph vessels.

OBITUARY RESOLUTIONS.

RESOLUTIONS BY THE FACULTY OF BELLEVUE HOSPITAL MEDICAL COLLEGE.

THE faculty of the Bellevue Hospital Medical College have the painful duty of directing a formal record in their minutes of the untimely and sudden death of their beloved colleague and president, the late Professor William Thomson Lusk, on June 12, 1897. Dr. Lusk was an alumnus of the College, the class of 1864, and class valedictorian. He became one of the instructors in the summer session in 1870. He was appointed professor of obstetrics in 1871 and president of the faculty in 1889. His great ability as a teacher and voluminous writer commanded the respect and admiration of the profession at home and abroad. His public services in the institutions under the charge of the Commissioners of Public Charities were rewarded by the appreciation and gratitude of all interested in medical charities. His devoted work in behalf of medical education connected his name most prominently with the teaching of medicine, and especially with the Bellevue Hospital Medical College. But above all, his fearless honesty of purpose and his exquisite gentleness of character and manner so endeared him to his associates in the College, that we, his loving colleagues

and friends, feel, in his death, a personal bereavement which words fail adequately to express. In common with his family, the profession, and his many devoted friends, we mourn his loss and deplore the premature end of a most useful and valuable life.

AUSTIN FLINT,
Secretary.

RESOLUTIONS BY THE MEDICAL BOARD OF ST. VINCENT'S HOSPITAL.

At a meeting of the Medical Board of St. Vincent's Hospital, held June 14, 1897, to take action on the death of Dr. William T. Lusk,

IT WAS RESOLVED to give expression of the deep sorrow of the members of the Board at the death of one who had labored so long and so well for the institution and for its inmates, and of a colleague who, by his courtesy and geniality, had won the high esteem of his associates.

IT WAS FURTHER RESOLVED to express to the family of the deceased the condolence of the members of the Board, and to forward a copy of this action to the medical journals.

CORRESPONDENCE.

THYROID EXTRACT IN THE TREATMENT OF FIBROID TUMORS OF THE UTERUS.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: I venture to ask the attention of the profession to the efficacy of thyroid extract in the treatment of fibroid tumors. I refer more particularly to fibroid tumors of the uterus. We are all familiar with the beneficent action of the remedy in the metrorrhagias of that condition (an action common, it appears, to hemorrhage due to similar states of the endometrium in other affections), but perhaps less so with the effects upon the growth itself. In this connection I hope soon to publish in your estimable journal a detailed report of several cases in which, to me, remarkable results have been obtained. In each case not only has growth been checked, but there has been a decided retrocession, accompanied by marked amelioration of local symptoms and improvement in general health.

I know of no remedy which meets all the indications in this disorder so markedly as thyroid extract. It should be given in much the same manner and with about the same limitations as in myxedema; its effect upon cardiac action and arterial tension being closely watched.

Respectfully yours,
NEW YORK, June 23, 1897.

W. M. POLK.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE PENNSYLVANIA EPILEPTIC HOSPITAL AND COLONY FARM—PHILADELPHIA COUNTY MEDICAL SOCIETY—PATHOLOGICAL SOCIETY OF PHILADELPHIA.

PHILADELPHIA, June 26, 1897.

IN view of the fact that Pennsylvania possesses no institution for the treatment of epileptics, of whom there are at least ten thousand within the borders of the State, the

growth of the project for the establishment of an epileptic hospital conducted on the village-community system by the Pennsylvania Epileptic Hospital and Colony Farm is being watched with no little interest by those concerned in the better treatment of this class of unfortunate patients.

The new institution, for the construction of which active steps have already been taken, is situated at Oakburne, a beautiful suburb within easy reach of this city, and here the incorporators are establishing an institution which bids fair to become a model of its kind, and which will make possible the employment of the very best modes of treatment for a class of people which, under other circumstances, must needs be more or less proscribed and neglected. Patients will here be placed under the most favorable circumstances of a continuous outdoor life, congenial occupation will be furnished them, and they will be relieved from the consciousness that they are looked upon as pariahs of society—a most important thing to be considered in the betterment of their condition. The Oakburne institution will not limit its work in any local sense of the word, but, in event of its adequate recognition in State appropriations, proposes to receive patients from every county in the State, for many of whom at present the almshouse or the insane asylum is the only refuge. In the present universal and indiscriminate clamor for State funds for hospital maintenance everywhere, and the claims of "pressing need" by some hospitals which could, upon close investigation, present but flimsy excuses for their existence, it is to be sincerely hoped that the Pennsylvania Epileptic Hospital and Colony Farm will receive the aid it merits in carrying on a valuable and eminently charitable work.

At the last stated meeting of the Philadelphia County Medical Society, held on June 23d, Dr. A. G. Thomson reported a case of "Complete Blindness Due to an Acute Poisoning from Over-use of Jamaica Ginger; Recovery Followed by Toxic Amblyopia of Ordinary Chronic Form." The subject of the poisoning, after the ingestion of more than a quart of Jamaica ginger, taken in lieu of an alcoholic beverage, suddenly became completely blind, and remained in this condition for a period of seven days, when his sight became gradually restored, although evidences of a toxic amblyopia persisted. Dr. Thomson lucidly explained the pathology of the lesion, and illustrated his remarks by eye-ground charts of the case in question. In the discussion of the paper, Dr. G. E. de Schweinitz spoke at length of toxic amblyopias in general, and expressed his belief that in amblyopias due to the use of alcohol, the poorer the grade of stimulant, the worse the amblyopia produced; in reference to tobacco amblyopias, of which he particularly spoke, Dr. de Schweinitz questioned if auto-intoxication did not play an important rôle as a casual agent of the condition, inasmuch as in such cases he had noticed that the eye symptoms were preceded by signs of the intoxication elsewhere. The whole subject was further elaborated by the views of Dr. Edward Jackson, Dr. A. A. Eshner, and others who participated in the discussion.

Dr. A. A. Eshner read a very interesting paper on "Hysteria in Early Life," which included seven cases of

this condition coming under the observation of the speaker. His remarks pertained to the coexistence in children of hysteria and epilepsy, to the difficulties surrounding the diagnosis of such cases, many of which it was obviously impossible to definitely class as one or the other condition, and to the importance of the recognition by the profession of hysteria in early life. Much light was thrown on this uncommon disease by the contribution of Dr. Eshner and by the discussion of the paper by Drs. C. W. Burr and G. E. de Schweinitz.

Dr. Henry Beates, Jr., read a communication, entitled "Remarks on Some of the Causes Defeating the Proper Progress of Therapeutics." He took up for consideration the poor results accruing from the modern treatment of disease, and took occasion to point out some of the causes for these unsatisfactory evidences of therapeutic advance.

At the last stated meeting of the Pathological Society of Philadelphia, held on June 24th, Drs. Swan and Ohnesorg exhibited a specimen of aortic aneurism which arose from behind the origin of the innominate artery, and weighed 1080 grams; the heart was hypertrophied, and there was considerable erosion of the sternum from the pressure of the aneurism. Dr. W. G. Spiller showed a number of stained specimens of the nerve-cells of the brain, and gave an interesting *résumé* of their histologic peculiarities and the methods by which the motor and sensory cells may be distinguished. Dr. C. W. Burr exhibited a tumor of the brain which occurred in a case which was considered clinically as one of mastoid disease, with a profuse purulent discharge from the ear. An operation for the mastoid condition failed to give relief, and upon *post-mortem* examination a massive growth, probably a gumma, was found in the anterior portion of the left hemisphere. Dr. Burr drew particular attention to the existence of such growths in patients suffering from mastoid disease, and referred to a similar case coming under his observation some years ago, in which it was impossible to make an *ante-mortem* diagnosis of brain tumor.

Among the physicians of this city who have recently sailed for Europe may be mentioned Drs. J. William White and W. Easterly Ashton, who left on June 19th, and Drs. Judson Deland and Robert N. Kelly, both of whom sailed on June 26th to attend the International Medical Congress at Moscow. Dr. P. S. Donnellan intends sailing within the next week, and will spend the summer in the British Isles.

OUR VIENNA LETTER.

[From our Special Correspondent.]

THE VIENNA POLYCLINIC CELEBRATES ITS 25TH ANNIVERSARY—THE WIDAL REACTION AND ITS GENERAL ACCEPTANCE—SPECIFIC PRECIPITATES BY SERUMS IN FILTERED CULTURES OF TYPHOID AND CHOLERA BACILLI—THE ROLE OF AMEBÆ IN DYSENTERY—TWO INTERESTING CASES OF MAJOR HYSTERIA—INTEREST IN THE MOSCOW CONGRESS AND SOME RECENTLY ANNOUNCED ARRANGEMENTS.

VIENNA, June 5, 1897.

ON May 11th the Vienna Polyclinic celebrated the 25th anniversary of its foundation. Its development and

present status are of special interest, as it was, I believe, the first of the Polyclinics which arranged its courses for special teaching and is the model on which others have been founded. Many American medical students of twenty years ago or even less must remember it in its old quarters when a great many inconveniences and hindrances to satisfactory work were encountered, which the present magnificent hospital building and well-arranged, well-lighted clinic rooms have obviated. The appreciation of its advantages may be best judged from the number of its students, 869 having registered last year.

Two things seem of interest in the Polyclinic hospital report for 1896. The income in round numbers was 43,000 gulden (about \$17,500), and the expenditures 38,200 gulden (\$15,500). Surpluses in hospital finance are rare enough to deserve notice. With the expenditure of \$15,500 some 53,000 out-patients and 1200 in-patients were cared for. A much smaller outlay than would be required under corresponding circumstances in America.

It is very evident that the medical world at present is in an attitude of ready expectancy with regard to new discoveries or new applications of scientific principles which promise to be of diagnostic or therapeutic importance. The Röntgen-rays, though so recently discovered, have been very thoroughly exploited everywhere and hardly a country has failed to add its mite of some application of them in special circumstances of importance to medicine or surgery. Widal's agglutinative reaction in typhoid has been scarcely a year before the profession, and from all sides come important series of observations on its diagnostic value. All are agreed that it is a decided aid in diagnosis, though the impression generally conveyed is that it is not of such absolutely facile pathognomonic significance as was at first hoped. The conclusion seems to be gradually gaining ground that the reaction produced is not absolutely specific and that the effect is rather a quantitative than a qualitative one. Undiluted or only slightly diluted typhoid serum will produce an agglutinative reaction with certain other microbic cultures, notably of the bacillus coli communis. On the other hand, certain normal serums, when undiluted, produce an agglutinative reaction, even with typhoid cultures, which is extremely difficult if not impossible to distinguish from that produced by typhoid serum.

Some of the developments in the matter of agglutinative reactions with other serums promise interesting results. For instance, the German government plague commission in India reports that a very similar reaction takes place in cultures of the plague bacillus when the serum of persons who have had plague, or of animals which have been inoculated with the disease and have recovered, is mixed with the cultures.

Dr. Kraus, at a meeting of the Royal Imperial Medical Society of Vienna, on April 30th, gave a preliminary report of some observations made with filtered cultures of typhoid and cholera bacilli. With absolutely germ-free cultures certain changes which are specific for each serum and culture may be noticed. Typhoid serum will produce a precipitate in filtered typhoid cultures more or

less plentiful according to the concentration of the serum and the age of the culture, and the same occurs for cholera products. Similar appearances are not produced when any but the specific allied serum is added to the filtered culture.

The precipitate in each case seems to contain an alkali albumin and a peptone, and Kraus is of the opinion that they are the result of certain secretions of the bacteria precipitated by specific properties of the serums. He suggests that further study along these lines may help to elucidate the vexed question as to whether immunity is due to chemic properties in the serum, or to vital properties of the morphologic elements of the blood. The subject is of paramount importance for a proper understanding of immunity and of very practical usefulness in the study of immunization. It is just now a much mooted point between the French and German schools of bacteriology, and has called forth some very interesting work from great leaders of the two schools, Metchnikoff and Pfeiffer.

A recent communication from Professor Schrötter's clinic at the Vienna General Hospital throws more doubt on the subject of the specific etiologic action of amebæ in dysentery. These observations, the result of some experiments on cats, are contradictory of the preliminary report of a case of dysentery in which a special form of ameba was found in the stools and was considered to be the etiologic factor in the affection. Animals injected with the stools acquired dysenteric symptoms and the amebæ appeared in the stools. After the disappearance of the germ, however, the dysenteric stools continued, and the injection of some of this material into another animal set up similar symptoms. No amebæ could be found in the dejections of the second animal at any time, though they were characteristically dysenteric.

The autopsies showed similar lesions in both animals. Curiously enough, these were not confined to and were not even most marked in the large intestine. The mucous membrane in the neighborhood of the ileocecal valve in the small intestine and for some distance beyond it was the seat of the ulcerative lesions characteristic of the disease, while the large intestine was only slightly affected.

The reporter calls special attention to it in view of the highly lauded, much-used local treatment which is so common, and which would be of absolutely no avail with lesions situated as these were. He suggests the existence, at least in non-tropical forms, of dysentery where amebæ are found of some other etiologic element, probably a coincident bacterium, as the true cause of the disease.

Two interesting cases of major hysteria have been reported from Vienna hospitals recently. One of them serves to show what pranks the functional neuroses may play even with the refinements of modern scientific diagnostic methods. The patient, a female of twenty, developed gastric symptoms, the main features of which were pain after eating, localized in the stomach region, and the vomiting of blood. An examination of the stomach contents showed the presence of free hydrochloric

acid considerably in excess of normal, and a preliminary diagnosis of gastric ulcer was made. After a month of the usual treatment for the condition there was marked amelioration of symptoms, though the patient had lost in the meantime considerable weight. A second examination of the stomach contents made at this time showed the absence of free hydrochloric acid, a great diminution in the combined hydrochloric, and the presence of a notable amount of lactic acid. The diagnosis of carcinoma, however, was not made, as the age of the patient made it so improbable and certain suspicious neurotic symptoms had in the meantime been noted. Verily, the neuroses do not lose in interest as time goes on.

The second case was one of the rarer instance of bleeding without known cause from a number of peripheral capillaries. Besides hemorrhage from mucous membranes there occurred bleeding from the mammae (of which not more than half a dozen cases have been reported), and bleeding from various skin areas, especially from the webs of the fingers.

The recent announcements by the committee of arrangements for the International Medical Congress at Moscow of the opportunities which will be afforded visiting physicians to see various places of medical and scientific interest in the Empire has awakened new interest very generally in the Congress. The trip to the Caucasus and its health resorts, with side trips on the Black and Caspian seas, the journey to last fifteen days, may be taken for merely a nominal sum (about \$28). The distance is some 2000 miles through the heart of Russia, and the sleeping cars are to be always at the disposal of the travelers, so that there will be no additional expense for lodging. The railway rates in Russia itself for accredited visitors to the Congress have not yet been definitely announced. There is even more of red tape it seems in the matter of governmental railways than our own, but it is now known for certain that there will be notable reductions in the already extremely low fares.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

CAUSE OF ACUTE EDEMA OF THE LUNG—TREATMENT OF LOCOMOTOR ATAXIA BY ELONGATION OF THE SPINAL CORD—TWO CASES OF PERFORATION OF THE STOMACH—AN ANATOMIC STUDY OF THE REDRESSEMENT BRUSQUE OF CALOT—RECOVERY FROM GANGRENOUS PLEURISY—A TEST FOR THE PERMEABILITY OF THE KIDNEY—TREATMENT OF RHEUMATISM BY COMPRESSES SATURATED WITH SALICYLATE OF METHYL—A CASE OF ACUTE STREPTOCOCCIC MACROGLOSSIA.

AT the session of the Academy of Medicine held April 27th, HUCHARD discussed the subject of *acute edema of the lung*, the cause of which has never been thoroughly understood. In his opinion the sequence of pathologic processes is as follows: First, a peri-aortitis produces a disturbance of the innervation of the heart and lungs; second, there is a considerable increase of the vascular tension in the pulmonary circulation; third, there is a rapid insufficiency of the right ventricle.

In accordance with these causes the medicinal treatment should be to reduce the work of the heart. This is best accomplished by the withdrawal of ten or twelve ounces of blood from a vein and by wet or dry cups applied to the thoracic and hepatic regions. The cardiac collapse is best met by injections of caffeine and camphorated oil. For the disturbance of innervation and the parietic state of the bronchi and diaphragm, hypodermic injections of strychnin and cauterization of the sternal region are advisable. Diuresis should be as free as possible. An exclusively milk diet and from twenty to forty grains of theobromin per day will accomplish this result.

A paper by CHIPAULT was read upon *the treatment of locomotor ataxia by elongation of the spinal cord*. This elongation is obtained not by suspension of the patient but by flexion of the vertebral column. Of forty-seven patients in the second stage of the disease treated by this method, twenty-two, or almost one-half, were relieved of all their symptoms, fifteen others were somewhat benefited, while the remaining ten received no benefit. The number of *séances* of flexion was in no case less than fifteen or twenty. They took place every two days and lasted from five to eight minutes.

At the session of March 4th DENTU reported *two cases of perforation of the stomach*, in one of which there were two openings and the patient died some hours after operation. In the other, operation was performed twenty-six hours after the perforation made itself manifest. There was a single perforation in the vicinity of the pylorus surrounded by fibrinous membranes, and as suture was impossible the site of perforation was tamponed and drained. The patient recovered. In both of these cases the cardinal signs of diagnosis, namely, excruciating pain in the pit of the stomach and disappearance of liver dulness, were both observed.

At the session of May 11, MENARD described the *results produced upon five cadavers presenting the deformity of Pott's disease by redressement brusque*, a method of treatment recently described by Calot. As a result of this forcible reduction of the deformity the bodies of vertebrae were separated a distance of one, two, or even three inches. The meninges and the cord did not appear to suffer in any way. In every case in which there was an anterior or lateral tuberculous abscess it was torn open and the tuberculous material brought into direct contact with the pleura or the meninges.

An anatomic study of cured cases of Pott's disease seems to indicate that at no period of the affection, not even in those cases in which a cure is obtained, is there new formation of osseous tissue. In a word, tuberculosis destroys the osseous tissue of the vertebral column but does not reproduce it. One is forced to the conclusion, therefore, that the interval between the bones, in patients subjected to Calot's treatment, are not filled in with an osseous callous and that the deformity is bound to recur.

COMBY and VOGT presented to the Medical Society of the Hospitals on April 30, a boy, aged eleven years, upon whom they had performed pleurotomy under discouraging circumstances. The illness began with an effusion in the left pleural cavity accompanied by unusually severe

symptoms of a typhoid character. On the third day pneumothorax developed. On the ninth day fetid pus, with a gangrenous odor, was obtained by aspiration. In the view of the almost fatal prognosis without intervention the pleural cavity was opened and irrigated with warm boracic-acid solution until the fluid returned perfectly clear. The pleura was gangrenous. The pleural cavity was irrigated daily with permanganate of potassium solution 1 to 2000. The case is interesting as showing the possibility of recovery after operation from a desperate condition. Examination of the pus showed that it contained the streptothrix funiculi, which was considered to be the cause not of the empyema but of its putridity.

ACHARD and CASTAIGNE described the significance of a test for determining the permeability of the kidney. Four grains of methyl blue dissolved in water are injected subcutaneously and the patient immediately passes water. Micturition is repeated at stated intervals, say every half hour, or hour. A simple inspection of the urine usually suffices to determine the presence of methyl blue, or the color may be collected by a few drops of chloroform added to the urine and shaken up with it in a test tube. The normal kidney gives a faint trace of blue in the urine in a half hour, and the reaction is very well marked inside of an hour. It reaches its maximum in from three to four hours, and disappears in from 1½ to two days. In patients whose kidneys are affected the appearance of the blue is delayed until after the first hour or perhaps later, or in some cases it does not appear at all. In twenty-two cases verified by autopsy this test has never failed, and in seventy-seven cases in which it was applied it failed in only four cases to agree with the clinical symptoms. This test seems likely to be of value in cases of Bright's disease without albuminuria, and also in cases of albuminuria without nephritis. It reveals the latent nephritis of tuberculous kidney, as was verified seven times at autopsy.

At the session of May 7th, LEMOINE stated that he had treated nine *rheumatic patients with compresses saturated with salicylate of methyl* and found that relief obtained was more rapid than that obtained by internal treatment with salicylate of soda. Essence of wintergreen, which contains ninety per cent. of the methyl salt, is poured upon a compress. This is placed upon the joint and covered with oiled silk or gutta-percha tissue, and held in place by a bandage. Two or three drams may be used in this manner without producing vertigo or any unpleasant symptoms.

SIDNEY found this treatment more efficacious than that of salicylate of soda taken internally in cases of subacute and chronic rheumatism. He employs the drug in much smaller quantities than Lemoine, putting only twenty-five or thirty drops upon the compress. One patient with gouty arthritis suffered from headaches and ringing in the ears after the application of a compress containing fifty drops.

MARIE reported that a diabetic patient excreting daily over an ounce of sugar was given methyl blue in doses varying from ten to twenty grains per day. In fifteen days the sugar had entirely disappeared from the urine.

At the session of the Biological Society held May 1st, LINOSSIER called attention to the fact that *pancreatic digestion is stopped by contact for a few seconds with abnormally acid gastric juice*. This result does not follow in all patients with hyperacidity, because the contents of the stomach as they pass into the intestine may be neutralized by the bile. It is most likely to occur in patients in whom hyperacidity is combined with hypersecretion. This explains the emaciated and cachectic appearance of these persons when contrasted with others in whom gastric digestion is absolutely wanting, but in whom intestinal digestion is undisturbed. The therapeutic suggestion is to prescribe alkalis toward the end of digestion, thus not only relieving the pains in the stomach, but also protecting the pancreatic digestion.

SABRAZES and BOUSQUET described a case of *acute streptococcic macroglossia* at the Society of Dermatology and Syphilis at the meeting held April 26th. The patient, a primipara, aged thirty-nine, a victim of tuberculosis and syphilis, aborted at the fifth month. She suffered from chills, fever, nausea, and albuminuria, and two days after the abortion the uterus was curetted. A bronchopneumonia and a subacute inflammation of the metacarpal phalangeal joint of the right index finger followed. One week after the abortion the tongue became greatly swollen, protruding from the month. There also was swelling of the throat, and dyspnea. The patient died of cardiac failure on the tenth day of her illness. The autopsy showed nodules of bronchopneumonia, a tricuspid endocarditis, a double serofibrinous pleurisy with effusion, large white kidneys, and a marked glossitis, especially of the anterior portion of the tongue, which was three times its normal volume. The inflammatory and degenerative alterations in its substance were produced by streptococci which existed there in great numbers.

Vienna.

A CASE OF UNUSUAL EXTENSIVE NEVUS PILOSIS—WHY RENAL CALCULI ARE SEEN WITH DIFFICULTY WITH THE X-RAY.

In the session of the Imperio-Royal Society of Physicians held April 30th, HEBRA showed a case of *unusually extensive nevus piloris*, occupying the left side of the face, the front of the body, and a portion of the extremities of a six-year-old girl. The mother and the sisters of this child were unusually hairy, and the nevus in her was covered with hairs, especially in those portions of the body where hairs grow in men but not in women. The interesting feature in this case is that this nevus was not congenital, but at birth the parts where it now exists were raw and bled easily. Two weeks later, when they were completely covered with epithelium, there appeared here and there dark spots, and in three-months' time the nevus had reached the dimensions which it afterward maintained. The development of this nevus a short time after birth is perhaps to be compared with the fact attested by numerous observers that the children of certain races of negroes are born with a light skin, while others are already black at birth.

FRISCH attempted to find out *why renal calculi*, even

those which are large enough to be palpable, *are seen with difficulty with the X-ray*. He found that stones composed of urates, and also those composed of ammonio-magnesium phosphate, offer little obstruction to the rays and therefore appear pale. Oxalic calculi throw the deepest shadow, while amorphous phosphates show fairly well. It is sometimes possible to make out the different layers of the stone. Thus one which was composed externally of phosphates, and was smooth and round, was seen by means of the ray to contain a rough core of calcic oxalate.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE, SECTION ON OPHTHALMOLOGY AND OTOTOLOGY.

Stated Meeting, Held Monday, April 19, 1897.

The President, DR. EMIL GRUENING, in the Chair.
DR. HERMAN KNAPP presented a case of

LUPUS OF THE LACHRYMAL SAC AND CONJUNCTIVA OF BOTH EYES.

The patient was a colored girl about fifteen years of age, in whom the condition was well marked. The disease had begun in the nose and infected the eyes through the lachrymal canals. The skin eruption presented the typical picture of lupus. The treatment proposed was destruction of the diseased tissues by the galvanocautery.

DR. R. DENIG exhibited specimens illustrating

THE CHANGES OCCURRING IN COMMOTIO RETINÆ.

The speaker had observed in experimental work on rabbits the ophthalmoscopic picture of subchoroidal hemorrhage, and had found it quite different from that of the so-called *commotio retinae*. In the former a grayish-white discoloration, which has the appearance of being in the deeper layers of the retina, is observed, while in *commotio retinae* the discoloration is milky-white and seems to be upon the surface of the retina. The anatomic conditions, therefore, do not consist of subchoroidal hemorrhage and edema retinae, but present typical changes in the nerve-fiber layer of the retina as follows: Corresponding to the ophthalmoscopic picture, there are many small elevations in the nerve-fiber layer of the retina strung together like pearls, with depressions between. The elevations are covered by *membrana limitans*, and the latter is torn in pieces. The ganglionic cells are here displaced somewhat backward. The nerve-fiber layer between the elevations is slightly thickened. Under a powerful magnifying glass the elevations have the appearance of a mushroom, with irregularly formed openings of various sizes.

The other layers of the retina are normal, and contain between the rods and cones some spheroid structures as exudations of the vessels of the choroid; the latter, immediately after the blow, being contracted for about thirty seconds, become paralyzed and dilated with simultaneous hyperemia of the optic disc. This condition could be very well observed in albinotic rabbits. Subchoroidal hemorrhages are caused only by very severe blows, and do not appear by lesser violence. If one may draw parallel

inferences from the rabbit's eye and that of the human being, it can easily be understood why in some instances of *commotio retinae* there exists, in spite of a normal fundus, a diminution of the peripheral and central vision in the form of *scoloma* or decrease of sight.

These changes are explained as follows: On receiving the blow the vitreous is forced against the retina like a wave, rebounding with the same violence against the starting point. Through the violence of this wave the stigmata of Mullers fibers are distended, at some spots the *limitans* is torn apart, and the vitreous fluid is pressed into the nerve-fiber layer of the retina. The latter becomes disentangled, giving rise to the above microscopic picture and, if large enough, producing the ophthalmoscopic picture of milky discoloration of the retina. The vitreous liquid, pressed inward, becomes gradually absorbed, the disentangled nerve-fibers join together, and all structures return to the normal. The fact that no harm is done to the nerve-fibers may be explained by the well-known resistance of the axis cylinders, for instance, in multiple sclerosis.

A paper, entitled

TRAUMATIC PROLAPSE OF THE IRIS AND ITS TREATMENT,

was read by DR. G. A. DESCHWEINITZ of Philadelphia. (See page 8.)

DISCUSSION.

DR. CHARLES J. KIPP of Newark, N. J., agreed in the main with the author. He was in the habit of abscising practically every prolapsed iris seen within a few days after the injury, and some that have been prolapsed for a longer period. When the rupture is situated near the sclerocorneal junction, he sometimes introduces a stitch to hold the wound together, and has never seen unpleasant results follow this procedure.

DR. T. R. POOLEY thought the position taken by the author, while admirable in some respects, was nevertheless open to criticism. Surgery of the eye does not differ from surgery elsewhere, and one of the first and fundamental rules of surgery, where a wound is concerned, is to protect it from any foreign body and to bring the edges of that wound together, and maintain them there. To do this, it may or may not be necessary to introduce sutures. They are seldom required in wounds of the eye, but the first and most important thing is to remove the foreign body. The iris here is a foreign body, and the proper treatment is abscission in all cases, except where there is an infectious disease of the eye, otherwise the iris will heal in the scar and the eye be subjected to traction and recurring attacks of iritis, and, possibly, glaucoma. Abscission is easily done when the wound is recent, but becomes a somewhat difficult matter if the condition has lasted some time. The author had stated that wounds of the conjunctiva are not apt to become infected, and in a recent paper Dr. Knapp said he rarely, or never, saw sympathetic ophthalmia follow prolapse of the iris, unless the latter was wounded by the injury or by the surgeon. The speaker's experience showed that conjunctival wounds are very liable to infection.

DR. P. A. CALLAN said that, as he grew older, he became more conservative. Whenever he saw a recent case of prolapse of the iris he put the patient to bed, applied ice-cold compresses and a firm bandage, employed mydriatics and waited three or four days to see what the result would be. If at the end of this time nothing was gained, he abscised the iris. He had seen brilliant results follow this treatment. He did not, however, believe in the expectant treatment when carried so far as to keep a patient in bed fifty-four days, as was done in Dr. Knapp's case.

DR. J. E. WEEKS said the stand he took was not quite so radical as that of Dr. Pooley, nor quite so conservative as that of Dr. de Schweinitz and Dr. Knapp. He thought the condition referred to by the author was incarceration, rather than prolapse of the iris. When this occurs there is present beneath the lids an elevation which is constantly being rubbed against by movements of the eye and eyelids, and there necessarily results more or less irritation. Prolapse of the iris may also be the means of carrying the secretion of an infectious disease of the lachrymal sac to the interior of the eye. It was his practice to abscise when the case is seen in the early stage and also in later stages whenever it is possible, provided a firm cicatrix has not formed. The plastic exudate which covers the iris after rupture of the cornea can easily be removed and the wound made perfectly clean. Healing can be obtained by reposition of what remains of the iris; if this is not possible, the iris should be excised. Little or no danger of infecting the eye is incurred. The results of conservative treatment are not good and the process of repair is much prolonged, whereas rapid recovery and no damage to the eyeball follow more energetic treatment.

DR. DAVID WEBSTER said he had not seen many cases of traumatic prolapse of the iris, except as a result of cataract operation. In such cases he followed one of the three plans mapped out by the author, *i.e.*, abscission of the prolapsed iris, reposition, or conservative treatment. He had often replaced a prolapsed iris, but had never been able to maintain it in position. At one time he had treated these cases by cauterization, but had abandoned the treatment. With regard to incarceration of the iris, he thought the treatment should be conservative.

DR. W. F. MITTENDORF was of the opinion that immediate abscission is the proper treatment of this condition, and at times he had performed the operation late at night.

DR. HERMAN KNAPP was in favor of non-operative treatment. In some cases he would abscise a prolapsed iris if he could make a clean iridectomy. He had been led to follow the conservative plan of treatment by the good results obtained twenty years ago in cases of prolapse of the iris when nothing was done for them. He never operated in those cases where the iris was not lacerated, nor the deeper parts injured, and where there was a chance of a linear scar resulting. What Dr. Pooley had said in regard to a prolapsed iris being a foreign body is true, but in this condition the iris protects the deeper parts of the eye by plugging up the external opening and thus preventing the entrance of germs. Regarding the reduction of a prolapsed iris, he thought this a very un-

certain method and no longer attempted it. Prolapse of the ciliary border of the eye after cataract operation is a most unfortunate complication, as it produces much swelling and a very unpleasant form of astigmatism.

The CHAIRMAN said that, as many wounds of the cornea which permit of prolapse of the iris are made with a pointed instrument, it is very difficult to abscise the iris properly through such a small wound, especially when the case is seen some time after the injury. Under such circumstances the wound should be enlarged.

DR. DE SCHWEINITZ, in closing, said he feared he had not made himself clear, for he was not so conservative in his views as Dr. Pooley seemed to think. He made it a rule to abscise in all cases, except in those where the wound reached across the entire cornea. In such cases the iris acts as a bar to the entrance of germs into the eye, and these he treated expectantly. Dr. Knapp had covered the ground when he said we should excise whenever a clean iridectomy could be done.

GERMAN SURGICAL SOCIETY.

Meeting Held at Langenbeck Haus, Berlin, April 21 to 24, 1897.

[From our Special Correspondent.]

The President, PROFESSOR BRUNS of Tübingen, in the Chair.

SURGICAL TREATMENT OF GASTRIC ULCER.

PROFESSOR V. LUBE of Würzburg reported that he had treated 1000 cases of gastric ulcer medicinally during the past ten years, the treatment consisting of rest in bed, hot applications, the administration of Carlsbad water, and a carefully regulated diet. Seventy-four per cent. of the patients were cured, 21 per cent. were improved, 16 per cent. were not improved, 4 per cent. lost sight of before the course of treatment was completed, and 2.4 per cent. died. He laid down the indications for surgical interference as follows: (1) Profuse, repeated bleeding, (2) severe and continued pain and vomiting, (3) perigastritis, with adhesions and abscess, (4) perforation.

PROFESSOR MICULICZ of Breslau read a paper on

METHODS OF OPERATING IN GASTRIC ULCER, AND INDICATIONS FOR OPERATION.

He said that 238 cases of operation for gastric ulcer had been reported, with a mortality of ten per cent. He has operated on thirty-six patients presenting this lesion. He expressed it as his opinion that resection is the most dangerous operation, and that in all cases but those having cancer, or ulcer of the anterior wall, a pyloroplasty operation is to be preferred. In instances of perforation, operative measures should be instituted at the earliest possible moment, as delay increases the danger of peritoneal infection. The infiltration method of anesthesia under these circumstances is often preferable to the use of ether or chloroform. It is frequently necessary to make use of the actual cautery in order to arrest the hemorrhage. He approved of the indications for operation as presented by v. Leube, and reported a series of cases in which patients

had remained perfectly well from seven to ten years subsequent to operation.

THE SURGICAL TREATMENT OF DIFFUSE PERITONITIS was the subject of a paper by DR. KROTE of Berlin. He said that the objects to be attained by operation are to prevent further infection and to relieve intraperitoneal pressure by removing the exudate, thus allowing of peristalsis, free circulation, and easy respiration. He recommended early operation, flushing of the cavity with sterile water, packing with gauze, and drainage. Sixty-eight cases were reported, with twenty-two recoveries.

DR. MARWEDEL of Heidelberg reported

A CLINICAL EXPERIENCE WITH THE USE OF THE MURPHY BUTTON.

He said that since the last medical congress fifty-five patients have been operated upon, and the Murphy button used, in Czerny's clinic. In thirty-five cases the anastomosis was between the stomach and intestine, in three it was between the gall-bladder and intestine, and in the remainder it was intestinal. Twenty-nine of the patients had a carcinomatous stenosis. Favorable result in several instances was attributed to the short time occupied in performing the operation.

The average time at which the button was passed was twelve days, the earliest being eight days and the latest forty-five. Of 328 cases thus far reported, stricture of the intestine has occurred in but three. The speaker drew attention to the inferior quality of the Murphy buttons frequently offered for sale, and insisted upon the necessity of selecting a reliable one when about to perform an anastomosis.

DR. KUMMEL of Hamburg read a paper on

THE SIGNIFICANCE OF THE ROENTGEN RAY IN SURGERY.

In addition to the ordinary uses of the ray in locating the presence of foreign metallic bodies in the body, the author had employed it in the diagnosis of stone in the bladder and kidney, of gall-stones, in fractures and dislocations, and in syphilitic, tuberculous, and osteomyelitic changes in bone, etc. He illustrated the points of his paper by showing more than one hundred finely executed plates.

During the discussion, DR. HOFFA of Würzburg spoke at some length, and showed numerous plates illustrating the use of the ray in the recognition and correction of deformities.

THE OPERATIVE TREATMENT OF HIGH STRICTURE OF THE RECTUM

was the title of a paper read by PROFESSOR SONNENBURG of Berlin. In syphilitic and gonorrheal stricture, his method of procedure is to resect the coccyx and a portion of the sacrum, lay open the stricture, and tampon the wound for several months. His first patient operated upon in this way six years ago has remained in good condition since. In cases of cancer located high in the rectum and in the sigmoid flexure, he first frees the growth from its attachments through an abdominal incision. The patient is then placed on his side and the rectum is freed

from below. The sphincter ani is then incised, the gut drawn down and out and divided above the lesion, and the end sewed to the sphincter. In the case of one patient, he removed twenty-two centimeters (seven inches) of intestine in this way. Healing was slow, but the man is now well, fourteen months after the operation.

DR. REHN of Frankfort-on-Main then read a paper on
PENETRATING HEART WOUNDS AND HEART SUTURE.

These wounds, the author said, are seldom met with, and, in consequence, experience in their treatment is slight. Large wounds invariably result in death; small wounds present a possibility of saving life by suitable treatment. It has been demonstrated by *post-mortem* examinations that even complicated wounds may heal.

At the author's request, a series of experiments had been carried out by Dr. Bode of Professor Landois' Physiological Institute, and the fact had been determined that a light touch on the heart of a live rabbit has no effect on the activity of the organ, strong pressure causes arrhythmia, and a puncture causes a short arrest, which is followed by rapid and uneven action. Small wounds have but little tendency to gape, while large wounds, no matter what the direction of the incision, gape widely. Hemorrhage is most severe from auricular wounds, and greater from the right than the left ventricle. Small wounds soon cease to bleed.

The clinical picture in these experiments showed bleeding of variable degree, a rapid, feeble pulse, cyanosis, and marked prostration.

The treatment in cases of slight wounds should be of an expectant order, the patient being kept absolutely quiet. Rehn does not recognize any necessity for venesection, the plan that has been advocated by some. In case operation is decided upon, the left ventricle is accessible after the third and fourth left costal cartilages and a portion of the ribs have been resected. To operate on the auricles, the sternum must be resected.

As an illustration of his method, the author presented a man, aged twenty-two, who had received a stab wound in the fourth left intercostal space on September 7, 1896. Upon admission to the hospital it was found that he was almost pulseless, cyanotic, and that the area of the heart's dulness was increased to the right. The following day he was somewhat better, but the area of dulness had still further increased.

On September 9th the man was much worse, the pulse being small and thread-like, the respirations 76 to the minute, and the heart area of dulness more pronounced. He appeared to be at the point of death. The pleura was incised in the fourth intercostal space, and the fifth costal cartilage and a portion of the rib was excised. The pericardium was laid open, when a wound $1\frac{1}{2}$ cm. long was found in the wall of the right ventricle. There was no loss of blood during systole. Three silk sutures were inserted in the edges of the wound, the clotted blood was washed out from the pericardial sac, and this cavity and the pleura were douched with normal saline solution. The cavities were then packed with iodoform gauze. The patient's pulse and respiration immediately improved, and

he went on to complete recovery, which, however, was complicated by the occurrence of suppurative pleuritis.

DR. BARDENHAUER of Köln reported a case of gunshot wound in which injury of the diaphragm was suspected. The pleura was opened, but no injury was found. The patient died after fourteen days, and at autopsy the bullet was found in the right auricle.

REVIEWS.

THE SURGERY OF THE CHEST. BY STEPHEN PAGET, M.A., Oxon., F.R.C.S., Surgeon to the West London Hospital and to the Metropolitan Hospital. Illustrated. New York: E. B. Treat, 1897.

IT is an uncommon pleasure to read a surgical monograph so well conceived, so well written and so exhaustive as the one under consideration. The author, aside from his own extensive experience in injuries and diseases of the chest, has carefully covered the range of literature bearing on the subject and has carried out the promise made in his preface "to make a collection of such facts and experiences as lie outside the usual course of our work." The fact that this book is the first on the subject to appear in the English language only enhances its present value.

Mr. Paget divides his subject into two parts, the first including injuries, the second diseases of the chest. Passing over the excellent chapter on surgical landmarks and deformities and those on fractures and dislocations, we note that the author commends simple puncture, not aspiration, in cases of pneumothorax due to disease or injury, if the symptoms do not abate under rest and opium. He admits, however, that in certain cases it may be necessary to make a free incision with or without resection of a rib. The prognosis in traumatic hernia of the lung, he regards as good if the lung has not been too long strangulated or is not already infected, and reduction of the hernia seems in most cases to have yielded the most satisfactory results. In cases of hemothorax, rest, next free resection, are advised, although in the latter event preparation for transfusion must be made previously.

The treatment of shock: immobilization of the chest and gauze drainage constitute Paget's advice for wounds of the lung of a penetrating character; but continued hemorrhage demands free exposure with plugging, suturing, or ligaturing of the pulmonary wound. The rare cardiac wounds require rest, possibly resection and opening of the pericardium in case of too great pressure of blood within it. Incision is reserved for urgent cases of primary serous pleural effusion, while aspiration is recommended for the usual cases. Nor does Paget agree in this respect with other authorities, notably in this country, who prefer immediate aspiration to the operation at the end of two or three weeks.

It is in the chapter on "Empyema" that the majority of readers of the book will be most interested, since empyema is the disease most frequently encountered in the chest demanding surgical treatment unless we regard the aspiration of a simple pleural effusion as a surgical oper-

ation. Although there is, in this chapter, not much that is strikingly new, the subject-matter is well arranged and the conclusions will be accepted as those most universally agreed upon. For example, "incision without resection is, at present, out of favor," and "the effusion must not be let out too rapidly" are statements that will meet general approbation. Again, the author condemns irrigation after empyema operations in which, we are sure, he has the sanction of most observant surgeons. In those instances in which the drainage tube becomes lost in the pleural cavity, a not infrequent accident when the tube is not properly secured, a free resection is urged rather than the usually useless tentative measures to recover it.

In speaking of bronchiectasis and its surgical treatment, the author bids the surgeon to be hopeful, giving the encouragement of a long record of successful cases. Each case, he tells us, must be studied on its merits and a different method of procedure followed in each. It was in 1877 that Trousseau laid down the dictum that an abscess of the lung was altogether beyond the reach of surgery and yet a large number of successful cases have been published since that time and similar good results have been chronicled in cases of gangrene of the lung. In "tubercular phthisis," Paget thinks only two conditions are amenable to surgical interference: fetid pyopneumothorax and large tuberculous cavities with septic absorption. Certainly, with the recollection fresh in mind of the romantic suicide of the young Italian surgeon after a fatal attempt to remove the tuberculous apices of his betrothed, surgeons will be skeptical of operation in simple tuberculous infiltration of the apex of the lung.

It is advisable, says the author, to attempt to save a patient's life by operation, when there is obstruction of the air-passages by foreign bodies which are otherwise not removable. Aspiration of the right ventricle may be attempted when this organ is over-distended because of injury. Conservative surgery is advocated in neoplasms of the lung. The chapter on subphrenic abscess is complete and embraces the results of Maydl's extensive studies. In the appendix are given M. Réclus's address at the French Surgical Congress of 1895 and Bulan's treatment of empyema by continuous syphon-drainage.

In this somewhat summary review we have established, we hope, the trustworthiness of the book. The extensive pathology, the judicious selection of casuistic examples, the terse and accurate statements as to the possibilities and limitations of the surgery of the chest, together make up a unique and valuable addition to medical literature. The book is well-printed on good paper and is handsomely illustrated. We have no doubt that we shall see its few imperfections removed in a second edition.

VORLESUNGEN ÜBER ALLGEMEINE PATHOLOGIE. Von DR. M. LÖWIT, o.ö., Professor der allgemeinen und experim. Pathologie aus der k.k. Universität Innsbruck. Erstes Heft: *Die Lehre vom Fieber*. Jena: Gustav Fischer, 1897.

THIS book is a most valuable addition to our knowledge of the various manifestations of fever, and it is one of the most important contributions to general pathology that

has been written for many years. The subject in hand is treated in a most exhaustive manner, quite in keeping with the usual style of the better German writers, and whereas it does not serve as a text-book, still as a work of reference it must be highly commended.

Since bacteriology has been proven to play so important a rôle in pathology, it is not surprising to note that several of the chapters deal with the many and varied effects produced by bacteria on living cells, and their importance in the etiology of fever. That pyrotoxin does not always arise from the bacterial cell-body, but that it is often produced by the metabolism between the organism and the tissues (Brieger) is shown. Some pathogenic bacteria may cause disease and no fever, as in many cases of cholera and tetanus, while some non-pathogenic forms may cause fever alone and no disease.

The various changes occurring in the blood in fever are minutely described and take up a great part of the text. The blood changes are among the most important manifestations of fever, but many problems are wholly unsolved. For instance, the author does not agree with Ughetti, who states that fever does not occur without important and recognizable destructive changes in the blood, and cites for example that ten to twenty-four hours after rabbits are inoculated with anthrax and while their temperature may be from 104° to 106° F. no morphologic or numeric changes can be discovered in the blood.

The book is fully up to date, well stocked with references and well worthy of close study. It is dedicated to Cohnheim's memory.

SYRINGOMYELIA. Alvarenga Prize Essay for the Year 1895. By GUY HINSDALE, M.D. Philadelphia: P. Blakiston & Co.

A NEW CLASSIFICATION OF THE MOTOR ANOMALIES OF THE EYE. Based upon Physiologic Principles, Together with Their Symptoms, Diagnosis, and Treatment. The Prize Essay of the Alumni Association of the College of Physicians and Surgeons, New York, 1896. By ALEXANDER DUANE, M.D. New York: J. H. Vail & Co.

BOTH of these essays have appeared in medical journals, the former in the *International Medical Magazine*, the latter in the *Annals of Ophthalmology and Otology*, and are now reproduced in book form. The former is comprised in 60 pages of text, the latter in 100.

Dr. Hinsdale's contribution is the outcome of a literary task, a review of the literature of syringomyelia, which has, despite the fact that the disease has been generally recognized only during the past decade, already taken on considerable proportions. The only contribution that he makes to the subject is the notes of two cases, duplicates of which can probably be found in almost any large hospital for chronic diseases in the country.

Compared with the opinion on the same subject of Hoffman, of Schlesinger, and of Dimitroff, the brochure before us suffers. It is by no means a complete reflection of the knowledge of the pathogenesis and symptomatology of the disease as to-day established. Careful reading compels the statement that the contributions in the literature

have not been thoroughly digested, nor is the subject matter laid open in the way one has a right to expect in a prize essay.

Dr. Duane's work is deserving of unstinted praise. Carefully planned, well-laid out, with a plain statement of the nature of the problem which he endeavors to solve, the writer attacks the subject in a manner that commands attention from the start and holds it through the many intricacies to the end. When he reaches his conclusion the careful reader is of the author's opinion. From the point of view of literary style alone the essay calls for favorable comment. The subject of motor anomalies of the eye has been so much discussed by certain enthusiasts and faddists during the past few years that an authoritative and scientific essay, such as the contribution of Dr. Duane, is a welcome one.

We would call attention to the erratum on p. 66, sixteenth line from bottom. The word *tenotomy* obviously should read *advancement*.

ARTIFICIAL ANESTHESIA. A. Manual of Anesthetic Agents and Their Employment in the Treatment of Disease. By LAURENCE TURNBULL, M.D., Ph.G., Aural Surgeon to the Jefferson Medical College Hospital, Philadelphia. Fourth edition. Philadelphia: P. Blakiston, Son & Co., 1896.

IN the seven years which have elapsed since the publication of the third edition of Dr. Turnbull's book, many additions have been made to the anesthetic armamentarium, particularly in the field of local anesthesia. These discoveries and the publication of many valuable treatises and articles upon the general subject of anesthesia and upon cognate themes, have rendered this new edition necessary.

The author reaffirms his opinion that ether is the safest general narcotic, but goes too far, we think, when he assigns evil results from its administration to the operator rather than to the agent. Lobular and lobar pneumonias following the skilful use of ether are by no means unknown. We agree with Dr. Turnbull that ether is safer than chloroform as an anesthetic for general use; but in this field above all others, a judicious selection of cases is a powerful factor in obtaining favorable sequels.

We heartily endorse the author's caution that "no one should be allowed to administer any anesthetic without a certain amount of tuition, and no one should receive a diploma until he has shown a knowledge of the chemical composition and physiological action of such anesthetics." It is strange that hospital boards should continue to show indifference to this subject.

All the systemic anesthetics and those with local action are fully considered, with modifications and combinations as they have been suggested by various writers. Indeed, there is no theme connected with anesthesia, general or local, which is not completely discussed.

We wish we could say as much for the literary style of the book as for its contents. The subheadings in the various chapters are in poor taste and give the page a chopped appearance. The diction is not in all parts as clear as it should be. The press-work is good and so are most of the illustrations.

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ORIGINAL ARTICLES.

PRACTICAL DATA ON EUROPEAN HEALTH RESORTS AND SANITARIA.¹

By SIMON BARUCH, M.D.,
OF NEW YORK.

THE execution of a long-cherished plan to examine the practical workings of health resorts and sanitarium with which American physicians are more or less theoretically familiar, has enabled the writer to add to his knowledge on the subject much that is useful, and to remove much from his conception that is false and misleading. To transmit to his colleagues as briefly as possible the result of his investigations is the object of this communication, which will refer to representative resorts for the respective class of maladies in which they are prescribed.

THROAT AND LUNG AFFECTIONS.

Salzbrun.—Salzbrun is a town of about 3500 inhabitants, situated in Silesia about 1350 feet above the sea level. Being out of the usual line of travel pursued by Americans and Englishmen, it is not so well known as Ems and other resorts of like therapeutic qualities. The Kurhaus and its adjacent villas, hotels, and boarding-houses are situated in a sheltered valley of a branch of the Giant Mountains, embowered amid pine-covered hills which protect it against strong winds and lend to the air that balmy softness which allures sufferers from throat and pulmonary troubles. The soil is sandy, with a substratum of clay and rock, affording excellent drainage. In bright, sunny weather it is a cheery nook, but in rainy weather is somewhat dreary, owing to the somber hue of the green-clad hills and the exclusion of sunlight by the too assiduous cultivation of shade trees. The latter are indeed the glory of the place. The promenade of stately trees is occupied by a motley crew which, armed with cups, traverses it going to or returning from the spring. The terraced hills adjoining the Kurhaus are covered by a dense thicket of small firs, the aroma of which has long been famed for its soothing effect upon the throat, and adds immensely to the "suggestive element" of therapeutics, the influence of which is potent for good in most of these resorts.

The *real* advantages of Salzbrun are derived from its somewhat equable thermometric and barometric conditions. (Average temperature, 58.1° F.; barometer, 750 mm.) There is an average of about one rainy day out of every four, hence freedom from irritating dust is almost assured, an element which cannot be overestimated in the management of diseases of the respiratory organs. To this remarkable circumstance the chief advantage of Salzbrun over many other resorts for similar maladies may be attributed. The construction of promenades and walks affords evidence of skilful adaptation of the natural undulations and other scenic conditions to the use of invalids whose capacity for exercise is limited. Terraces are well graded and arranged in such manner that a large number of promenaders may utilize them without crowding. This is readily accomplished by reason of the thick forest of small pines which have been artificially cultivated wherever Nature proved deficient, thus screening each terrace from others quite adjacent. The ease with which feeble patients ascend these emerald-wooded hills strikes the observer on every side. Herein lies another advantage of Salzbrun. As a resort, the entire invalid population may and does live in the open air during the greater part of each day. When the Kapelle plays the morning choral at 6 A. M., the crowd begins its wanderings to the spring, moving gently along the promenade, engaged in conversation or observing the crowds. With the exception of meal times, which are frequent but brief interruptions, walking or sitting in the open air continues until 9 or 10 P. M. Milk and whey are used freely by the patients, always, however, in obedience to the physician's directions. The preparation and disposition of milk is an important industry here. The milk is obtained from cows, goats, asses, and sheep. Kefir, whey, plain or combined with iron, are furnished at the larger springs from clean cans, cold or warm, being dispensed by prettily attired dairy maids, who present a strong contrast to the male dispensers standing at the wells furnishing the mineral water.

It is worthy of mention that the entire dairy department, supplied with a centrifuge and sterilizers, is under the supervision of a chemist who applies all modern methods to its purification, while the health of the animals furnishing the milk is carefully guarded by a veterinary surgeon. About 30,000

¹ Read at a meeting of the Northwestern Medical and Surgical Society of New York, May 19th, 1897.

liters of cow's milk are consumed in a season; this does not include asses' milk (for which a similarity to human milk is still claimed here), or sheep's milk, which is said to be exceedingly rich in cream. The mixture of whey with the warm water of the Obersalzbrunnen is recommended by physicians here as an "expectorant" and laxative. Many patients may be seen sipping this combination at the spring. The hydrotherapeutic appliances of this kurort are primitive; a modern apparatus is promised by the management.

A novel department may be found on the hillside near the promenade. It is the "Gurgel pavilion," or gargling hall. This is built over the "Mühlbrunnen," which has the reputation for great efficacy as a local application in affections of the nose, throat, and larynx. There are separate halls for males and females, each being divided into compartments. The latter are about eight by four feet and contain a small gutter, above which is fastened a bar which is grasped by the patient's left hand, while the right holds the cup which supplies the mouth with the gargle. The head is thrown back, as usual in these guttural gymnastics, and each patient laves his throat to his heart's content, expelling the fluid into the gutter, which is kept cleansed by a flowing stream of water containing some disinfectant or steam. The gurgling chorus which reaches the ear as one approaches this pavilion is unique. That the patients derive any real benefit, besides the cleansing effect from these applications, seems doubtful at least. It certainly amuses them and serves to while away the tedium of an invalid existence; it is done with punctual regularity before breakfast precisely as prescribed by the physician, therefore must contribute a strong mental element to the "cure."

The chief disadvantage of Salzbrun lies in its popularity (in 1895 the number of patients aggregated 4300). Last summer it was so large that people were uncomfortably jostled during the morning hours when the spring is most frequented. It would be wise to limit the number of patients, for many will be driven away by the discomfort of too close contact with similar sufferers.

The writer's experience with the food and service in the dining-room of the Kurhaus does not warrant him in commending it; but the lodging is most comfortable. Upon the whole Salzbrun may be safely prescribed as a useful resort for the milder forms of affections of the upper respiratory tract and in some cases of chronic or subacute catarrhal disturbances of the bronchiæ. In regard to the water, it is claimed that its large proportion of the bicarbonate of soda combined with an appreciable percentage of bicarbonate of lithia, and a considerable quantity of free

carbonic acid enhances tissue change by increasing oxidation; that it dissolves mucus and diminishes its formation. Empirically, the Obersalzbrunnen has demonstrated its value not alone in the catarrhal affections referred to, but also in gout, lithiasis, diabetes, and other affections connected with defective or abnormal oxidation processes. It is palatable and does not deteriorate when kept in well-stoppered receptacles. Hence, it is shipped in large quantities (one million bottles in 1895). Conversation with the patients, one of whom was a case of aborted phthisis, diagnosticated and sent to Salzbrun fifteen years ago, satisfied the writer of the clinical value of the climate and water of Salzbrun in catarrhal affections of the respiratory tracts, and in cases of emphysema, when not too far advanced.

The congregation of cases of laryngeal phthisis in so small a resort renders it unfit for the treatment of diseases of the stomach and others referred to, because most of the latter being disposed to be hypochondriacal would surely be greatly depressed by the presence of the sad, pallid, and haggard specimens of coughing humanity seen here.

It may be mentioned that the cost of living is very reasonable in Silesia, the people are kind-hearted, the hotel proprietors being the very essence of urbanity, looking personally after the comfort of their guests. In the smaller hotels it seems to be the custom for the host to bid each and every guest at his table "Mahlzeit," which comprises all that may be required for the enjoyment of the meal.

In order to acquaint himself personally with a more noted resort the writer visited *Ems*. Unlike Salzbrun, Ems is somewhat contracted, lying in a narrow valley between spurs of the Rheingebirge, and being divided into two unequal parts by the river Lahn, which is bridged at two points. These hills rise to a height of from 500 to 1000 feet almost precipitously, presenting in some parts jutting rocks which seem to overhang the dwellings, but at most points these are covered with abundant foliage, varied by well-tilled fields and vineyards. Consequently there is no room for expansion in the direction of the hill sides, and patients are compelled to climb somewhat precipitous elevations in order to reach points outside of the village. Much has been done to overcome this difficulty, walks having been graded, and a cog railway having been constructed on the Mahlberg, upon whose summit pleasant well-shaded walks are abundant, affording the invalid the most enchanting views of the Rhine hills. Excursions up and down the Rhine, which is only twenty minutes distant, concerts, and the usual diversions of fashionable watering-places offer amusement and entertainment in a form which does not interfere

with the exacting demands of the "cure." Early hours for retiring being insisted upon by the physicians the concerts cease at 10 P. M., and begin at 7 A. M. The morning choral finds a motley assemblage, consisting of many nationalities, upon the stone pavements which separate the Kurgarten from the buildings containing the springs. This space is about the size of a small New York square, and is therefore very much overcrowded during the drinking hours. The springs are situated in a row of buildings which contain the shops usually found in these health resorts.

There are nine hot saline akalin springs, varying in temperature from 88° to 120° F., three of which are used for purposes of inhalation and six for drinking. The mineral constituents are feeble, the chief being 1 per 1000 of chlorid of sodium and 2 per 1000 of bicarbonate of soda, some containing as high as 500 volumes per 1000. The springs mostly patronized are the Kesselbrunnen and Kraehuchen, the former for inhalation and the latter for internal use. The Kaiserquelle appears to be the least used, judging from the number visiting it in the mornings when I observed them.

The most ingenious methods for inhalation have been devised and are in active operation here. The Schnitler apparatus delivers the Kesselbrunnen water into the patient's throat under pressure of half an atmosphere, the inhaling fluid consisting of some mild antiseptic balsamic agent, which is poured into the bottles. The Levin apparatus drives the inhaling fluid under a pressure of four atmospheres into the inhaling apparatuses; the latter are placed in rows upon a table, the patient sitting quietly in front of them inhaling. Other apparatuses for inhaling came under my notice in the splendidly arranged Quaehl Inhalatorium, which contains sixteen Jahr's apparatuses for inhalation of fluid medicines and saline or acid solutions, which are atomized into the finest spray; ten Dupont-Matthew machines for the inhalation of compressed air and expiration into rarefied air, with or without medicinal agents, all being prescribed by the medical attendant; two machines for inhaling oxygen, pure or mixed, according to prescription; three Waldenburg's apparatuses, and one Rossbach-Zobeibier respiration chair for lung gymnastics.

The most remarkable inhaling apparatus I observed is the Wassmuth inhalation, which offers facilities for inhalation of finely atomized fluids, chiefly Ems waters and balsams, to eighty persons, who may move around or sit down quietly and occupy themselves in a well-ventilated room.

A solution of chloro-borate of soda, devised by Professor Fresenius, is the favorite inhaling fluid. I found it agreeable, and, contrary to my preconceived

notions, distinctly felt the effect upon my bronchial tubes in promoting expectoration.

The Quaehl Inhalatorium is capable of affording 110 patients facilities for inhalation. The therapeutic indications are as follows:

1. Oxygen inhalations are used in dyspneic conditions and in catarrh, emphysema, and asthma; also, in chlorosis, leukemia, and gout.

2. Inhalations of compressed air are applied in bronchitis, asthma, pleuritic exudates, and in phthisis. Exhalation into rarefied air is applied in bronchitis, emphysema, and asthma. In most of these diseases a combined method is applied.

Another large institution is Goebel's Pneumatic Inhalatorium, in which hydraulic pressure is utilized and the air inhaled is not only warmed but cleansed by passing through a Wolff flask. The apparatus is automatic, and serves twenty-one persons; the water for inhalation is constantly renewed; the inspired air is not drawn from the room, but from the external air.

That there is a positive effect upon the air passages produced by these inhalations I am fully convinced by personal trial, but my observations upon their therapeutic effects are not sufficient to warrant any reliable deductions.

No treatment is administered in these principal inhalatoria without a physician's prescription. Dr. Geisse and his son, who are English physicians of long residence at Ems, offered me every facility by personal guidance to examine these institutions.

Ems is very hot in midsummer, but the air is pure and the nights are usually cool. There are many beautiful excursions, since it lies only half an hour's ride from the Rhine.

PHTHISIS.

Germany is the birthplace of the systematic treatment of phthisis by the hygienic, dietetic, and climatic method. Perhaps the most gratifying results observed in the treatment of chronic diseases are obtained in the famous institutions at Goerbersdorf, Falkenstein, Rupertshain, Rheiboldgrun, and others. A brief outline of these may interest you.

In Goerbersdorf, a small village lying in the mountains of Silesia, are situated the largest sanatoria for phthisis. Among these is the great institution built by Herrmann Brehmer. The enormous building is constructed of brick, and almost its entire façade is covered with glass-enclosed verandas. The grounds occupy 600 acres, and cost several million marks. Here the indefatigable pioneer of modern phthisis-therapy spent his whole life, and obtained the most favorable results. Unfortunately his heirs are unable or unwilling to leave the management of the institution in the hands of its capable medical director. I

was unable to obtain more than a very superficial idea of the institution. It contains facilities for treating every stage of phthisis, including a very crude apparatus for hydrotherapy, consisting of a shower-bath similar to that I saw later at Falkenstein. The physician stands in an adjoining room which is connected by a speaking tube, and directs the duration of the shower. But there is no thermometer to indicate the temperature of the water. Still they claim good results from hydrotherapy, and regard it as a powerful auxiliary. The method pursued here is somewhat indicated by an inscription upon one of the walls which reads, translated, "Patients do not come here to be amused, but to be cured." Brehmer always discouraged the association of phthisical people with the well, because the latter offer temptations to the former, which lead to transgression of his rules. Patients are encouraged to amuse themselves with innocent games, singing, dancing, etc., provided the physician's consent has been obtained.

Time will not permit a more extended description of this pioneer-institution for phthisis-therapy. The author of the method, Herrmann Brehmer, has passed to the great majority, but his teachings live and have most able exponents in Dettweiler, Roempler, and others.

The most modern sanitarium for phthisis, which I have visited, is also situated in Goerbersdorf. During the past twenty years it has been conducted by Dr. Theodor Roempler, a man of high attainments and the very essence of kindly courtesies. The institution being a model one is worthy of some descriptive details. It lies in a beautiful valley, embowered amid pine-covered mountain peaks. The grounds consist of 368 acres of land and 115 acres of forest. The former is tastefully laid out in walks and gardens, which may by an ingenious arrangement be sprinkled in a short time and thus become freed from dust. There are covered colonnades and a Wandelbahn for walking in inclement weather. The Liegehalle, a rest hall, being in a protected part of the building may be used in all kinds of weather for the air cure. The buildings are chiefly frame and contain 100 dwelling-rooms, which are heated by water, as is also the large winter or palm garden. The dining-room seats 200 persons and is attractive in all its appointments. Water is obtained from a stream issuing from the mountain peaks 300 feet above the valley. Laboratories for bacteriological work, a steam disinfecting apparatus, good diet, ventilation, and all the most approved methods combine to render this a perfect modern sanitarium for phthisis, which is capable of treating patients at all seasons. Roempler claims with justice as the result of his ob-

servations that the earliest possible removal of the consumptive from his unfavorable environment to the pure mountain air will most surely conduce to his recovery in a few weeks, while later action would defer it in proportion to the delay. Everything in the institution is under Dr. Roempler's control, he being the sole proprietor. He claims that tuberculosis depends not so much upon infection as upon the condition of the soil upon which it is implanted. He agrees with Hueppe that the cause of infectious diseases is always internal, as in the condition of the cells and tissues which the older writers called predisposition. He does not compare the Koch bacilli, as does Cornet, to bullets which may strike down any one, and from which many may and do escape, but rather to a spark whose devastation depends upon the quality of the material upon which it falls. If the seventh part of the human race dies of phthisis, and every fourth individual of tuberculosis, how difficult it must be for the other portion to escape, if it were not for the need of a good soil upon which infection may produce its sad fruit. These are trite observations now, but Roempler battled for them many years ago. He does not claim any special advantage for high altitude as do many others, but attributes success, as does his preceptor Brehmer, chiefly to proper hygienic, dietetic, and methodical treatment. That the latter not only cures but prevents phthisis Roempler has shown by the municipal statistics of Goerbersdorf.

During the century ending in 1889, seventy-two persons died of phthisis in Goerbersdorf; during ten years of the period fourteen persons died of the disease, while during the last ten years, despite a doubling of the population, the number of deaths was only five since 1875. Roempler, who knew and saw every consumptive among the inhabitants of the village since that year, states that of 207 deaths only 11 died from phthisis. During the same period 19 persons died of old age, *i.e.*, between the ages of 70 and 91. During that same period 933 patients died of phthisis in the Goerbersdorf institution. This demonstrates the fact that the inhabitants, though often in contact with phthisical patients, possess an immunity which, in his opinion, is due to their outdoor life, berry picking being a favorite occupation. Roempler insists that the fear of contagion is overdrawn, and that the intelligent public *would derive more benefit from instruction in a proper mode of life, proper respiration, nutrition, and care of the skin than from the latest discoveries in bacteriology.* My brief interview with this interesting gentleman brought many things to my practical appreciation which had hitherto been overlooked.

The chief aims of treatment are rest and exercise,

diet, open-air life and hydrotherapy. No patient having a temperature above 99.5° F. is allowed to exercise. Those who are permitted to leave the institution receive instruction to walk upon the carefully constructed roads which contain landmarks and sheltered seats, and which in winter are swept clear of snow. They are cautioned not to fatigue themselves. Rest in the open air appears to be the chief therapeutic agent. Lounging chairs are comfortably placed under the balconies, which have a southern exposure, and a portion of which is inclosed in glass for the worst cases. There is also a dressing-room adjoining the balconies, in which patients are enjoined to change their clothing when perspiring too freely after their walks before they occupy seats on lounges. Well protected by clothing and furs in winter, and appropriately clad in summer, the patients having temperature elevation recline upon lounging-chairs from the time they leave the breakfast table until the dinner hour, and again in the afternoon until supper. Patients presenting temperatures above 100° F. have their meals served while in the chairs. Nurses are in constant attendance. At stated intervals patients are made to rise and pass through a system of lung gymnastics, which is mild yet effective. After supper the patients rest awhile, and then retire to their chambers. The latter, being amply provided with windows, are ventilated during the entire day. An hour before the patients enter their rooms the latter are heated, the windows having been closed. The patients having temperature above 100° F. are now carefully undressed by the attendants, others undressing themselves. After being well tucked in, the windows are opened and are kept open during all seasons. Attendants watch the patients during the night and see that they are properly covered and that the face alone is exposed to the cold air. Before the patients rise the windows are again closed; the rooms are so heated (in winter) that there is no uncomfortable exposure. After the rooms are vacated, the windows are again opened and remain open all day. Bed clothing is aired and the rooms are carefully swept. Everything is scrupulously clean and sterilized. The beds, pillows and mattresses are often subjected to superheated steam, also the clothing of all patients leaving the institution.

Falkenstein is a small village lying about two hours by rail and wagon-road from Frankfort-on-the-Main. Its being the residence of the widowed Empress of Germany and of Baroness Rothschild would indicate that Nature has been lavish in her gifts to this mountain region. Dr. Dettweiler, who with Brehmer is a pioneer of dietetic and hygienic phthisis-therapy, has built here a private sanitarium,

capable of containing fifty patients which is resorted to by phthisical patients from all parts of the world.

Dettweiler does not favor large institutions, 100 patients is the largest number he would sanction. In this respect Schroetter of Vienna differs from him, being engaged in the construction of an institution for 300 patients, which is to be so arranged and governed that each patient shall have individual care. The principle of rest for cases having temperature elevation is rigidly enforced. The rules of conduct and treatment described as existing in Dr. Roempler's sanitarium are in force here. Dettweiler and Brehmer having been the original exponents of the rest treatment, the former carries the principle of rest to the utmost extreme. Whether the patients are stretched upon their lounging-chairs or at meals absolute silence is insisted upon. Even coughing is forbidden. When I remonstrated with Dr. Dettweiler against this seeming cruelty, he asked me if I would scratch my head in a room-full of people every time it itched. He teaches the patients to resist the desire to cough to the utmost. An embellished tablet hanging on the upper wall of the Liegehalle contains the following verse composed by a cured patient:

"In dem Tempel der Bacille
Herrsche musterlose Stille,
Walte Lust und Heiterkeit,
Dann ist die Heilung nicht mehr weit."

Each patient has a bottle for expectorations. The house is scrupulously neat and clean. Everything is sterilized. All the table utensils are carefully subjected to prolonged boiling (before each meal). The smallest details of the patient's life are controlled by the supervising physician, and nothing of any importance is left to his or her judgment. The daily exercise in the open air, the use of lung gymnastics, the administration of stimulants, even the changing of garments are all under the direction of the attending physician. Dettweiler says the physician who wants to manage successfully such an institution must himself be a good man, the possessor of a big heart and much patience, and he must be supplied with all the instincts of a "shepherd's dog." The relation of teacher and pupil, in the fullest and best sense of the word, must exist between the physician and his patients, and, without entering into the field of popular medical lectures, the patients should be taught to understand the physiologic and hygienic laws which it is so essential for them to follow if they desire to come out victorious in the battle with the bacillus of tuberculosis. The physician's office should be the patient's confessional chamber, and every possible effort should be made among the patients to foster implicit confidence in and strict obedience to the physician.

A few patients who can afford such a luxury live in neatly constructed huts, which revolve and thus easily remove the open portion from the wind or driving rain. A New York patient who occupied one of these huts informed me that he was improving in this cold climate, after being injured by the climate of Nice. Hydrotherapy is practised very crudely. A small room, with a cement floor shaped into a basin, receives the nude patient, who stands under a shower eighteen inches in diameter. The attendant draws the cord and the patient receives a fierce cold shower. This is repeated daily. The courteous attendant in reply to my anxious inquiry regarding the temperature and duration, replied that "the water is just as it comes from the mountain, and the time is left to the judgment of the physician." My inquiry regarding the exact temperature of this water was satisfied by a bath thermometer being brought from an adjoining room and placed under the flowing water. It registered 58° F., and this in midsummer. In winter it registers about 45° F. Dr. Blumenfeld, the courteous first-assistant of Dr. Dettweiler, assured me that patients bear the shower very well, after being somewhat improved by the hygienic and dietetic treatment pursued for a few weeks. I regretted to discover this crude hydrotherapy, because a most valuable element of treatment is lost to feeble patients and applied very late in those who may bear it better. The method I have introduced in the Montefiore Home, in this city, where it is practised with much success, is far more rational. Here every patient is at once subjected to mild ablutions or rain baths, after carefully widening the cutaneous vessels by hot-air baths short of perspiration. Day by day the reactive capacity is enhanced, the heart invigorated, the respiration deepened, and the nutrition improved. Gain of weight and the patient's appearance testify clearly to these results. Some patients refuse to take these baths unless they are allowed to receive low temperatures. Sixty-five degrees F. is the lowest I prescribe, but some of the Montefiore patients have become so inured to them that they bear 45° F. with impunity, as I am informed by Dr. Fraenkel, and have observed myself in one case. This adaptation of temperature to the varying conditions of the patient and the gradual accustoming of patients to the shock and reaction, which I regard as imperative whenever the agent is applied, would seem more rational in phthisis than the application of a fixed and very low temperature which must exclude many otherwise favorable cases from the treatment.

An excellent luncheon at Dettweiler's sanitarium convinced me that the cuisine and attendance are unexcelled. Dr. Blumenfeld stated that the tone of

the institution is one of hopefulness and good cheer. Good food, pure air and water, and ventilation of bed-rooms combine to produce the excellent results obtained.

Institutions for the Middle Classes.—While investigating the subject of phthisotherapy my attention was drawn to the great movement for Volkheilstätte or people's sanatoria, now in full operation in Germany. With a view to observe their workings, I visited two of these institutions.

Ruppertshain.—This is a small institution established under Dettweiler's auspices for the purpose of affording working people the means of obtaining the same treatment which at the Falkenstein Sanitarium can be obtained only by well-to-do people. The cost at Falkenstein ranges from \$3. to \$5. per *per diem*, while at Ruppertshain the expense ranges from 62 cents to \$1.50 per day, which is not sufficient to pay expenses. This noble institution, which is still in its infancy, being prepared for only sixty patients, and harboring at the time of my visit only thirty patients, received its chief impetus from the bacteriophobia of a rich but generous woman. Dr. Hirsch, a philanthropic physician of Frankfort, had founded a small sanitarium with twenty beds at Falkenstein. This was bought for \$15,000 by the Frankfort Association for Convalescents. It was situated opposite the villa of the Baroness Rothschild, who, fearing the near proximity of an army of bacilli, offered \$50,000 for the property, razed it to the ground, and disinfected the latter. Upon this capital the association was formed which now controls this beneficent institution, its members being chiefly among the best citizens of Frankfort and the neighboring towns. The Empress Frederick and the Baroness Rothschild are active contributing members who often visit the institution. (The latter established a separate kitchen in which the Jewish dietary and cooking laws could be strictly observed for the benefit of any Jewish patients desiring it.) Patients are sent by mutual benefit societies in Frankfort, Hesse, and other cities, which pay for each member. They are usually taken on eight-days' trial to ascertain the fitness of the case, which also is certified to by the previous medical attendant.

Dr. Nahin, a former assistant of Dettweiler, being medical director, all the regulations of the Falkenstein Institution are strictly followed, the discipline being more strict. The water treatment is rational here. Patients are first subjected to daily dry friction, then cool, wet friction, and douches follow after their reactive capacity is established.

Many such institutions, called Volksheilstätte, have been established in Germany by sick insurance

companies. I was informed that Koch was expected to assume charge of a large one at Hoechst in the Odenwald.

A similar institution is located in Goerbersdorf, called "Krankenheim." This originated with and is in charge of Dr. H. Weicker, whom I had the pleasure of visiting. This is a modest institution; beginning with nine patients the number increased in 1896 to 185. One-half of the patients are sent by various sick benefit, and other associations, the other half are people of moderate means who defray their own expenses. The building was intended for a villa and is surrounded by fine old trees. Each room is occupied by two or three patients; the walls are painted in oil, and the rooms heated by porcelain stoves. The beds are of iron with wire mattresses. Woolen blankets used on the beds are enveloped by covers of washable material. Spittoons, in the shape of sand-glasses, are secured to the walls about the height of a man's chest. These are disinfected by lysol solution. Accidental expectorations on the floor are not allowed to be touched by the patients, who are enjoined to call an attendant with lysol solution. There are no spittoons in the bed-rooms, because patients were in the habit of indulging in shooting matches which soiled the floor. Cups, which must be held before the mouth, were therefore substituted. Each patient must clean his hands with a nailbrush before, and rinse his mouth with salt water before and after meals. In short, the strict discipline regarding the patient's conduct, his treatment, his occupation, diet, rising, and retiring, are given in writing. Separate groups elect their presiding officers, who are responsible for reports. Dr. Weicker endeavors to keep the patients busy all day with the "Kur," the principal part of which consists of lying in the open air. With regard to occupation Weicker gave me good reasons for differing from Wolff, and others, who favor some light work. How can tuberculous patients be expected to protect a crop against an approaching rain storm, for instance? At most he favors retaining some of the actually convalescent patients for farm labor in order to render their recovery more permanent than it would be if they returned to other unfavorable home environment. The hygienic education of the patient is made permanent; it not only furthers his restoration to health but maintains the latter, and converts him into a missionary of hygiene. The German legislature passed laws in 1889 for the furtherance of sick benefit and insurance companies, and for the authorization of the construction of sanatoria for consumptives. It has been demonstrated that among 1000 deaths at the ages from fifteen to sixty years, 322 are from consumption. If the ability to labor of each of these

sick people could be increased three years, many millions would be saved, inasmuch as one-third of the entire population is involved.

In our own country similar conditions prevail, with the sad additional fact that mutual benefit societies are not so numerous as in older countries. No greater beneficence can be bestowed upon suffering humanity than the erection of sanatoria for phthisis by private and public aid to which people of moderate means could be sent in the *initial* stages of the disease.

The municipal authorities should erect a hospital for phthisical patients, in which all modern therapeutic methods may be utilized. To this all initial cases of phthisis reported to the Board of Health should be sent. This would *seem* a great hardship. But careful consideration would show that a focus of infection would then be removed from the "laboring-man's" home to which he may be returned in an improved condition, and imbued with the importance of observing strictly hygienic rules which would prevent the lighting up of any smouldering ember of his disease in himself or family. Tempting as is this subject time does not permit of my dilating upon it.

The late Dr. Paul Kretzschmar of Brooklyn published an appeal for the construction of such sanatoria in 1888, which presents the subject in the clearest manner. The efforts of this enthusiastic philanthropist should be borne in mind whenever the subject of institutions for phthisis is discussed. They have indirectly borne some fruit in the building of the Seton Hospital, which was organized under the lamented West Roosevelt, and is now under the care of that able clinical teacher. Dr. Frank W. Jackson, chief of the Vanderbilt Clinic.

HEART DISEASES.

The treatment of cardiac diseases has found a large field at Nauheim, which I visited for the purpose of studying the carbonated saline baths utilized there.

Nauheim is a small town lying at the foot of the Taunus Mountain, and supplied by strong saline springs from which salt is made by evaporation. Having fine parks, excellent hotels, and good physicians, it is an ideal resort for cases requiring rest and treatment. The brothers Schott, following the initiative of Professor Beneke, discovered that many neurotics who used the baths improved not alone in their depreciated nerve-tone, but gained in cardiac vigor. By careful study the late Dr. Theodore Schott evolved a treatment of saline baths and Swedish (resisting) movements, the effects of which upon certain cardiac diseases are indisputable. Some of these baths are quite efficient in functional neurosis, and chronic rheumatism.

Briefly stated, the principal springs are the Karlsbrunnen for drinking, containing $16\frac{1}{2}$ per cent. chlorid of sodium, 1 per 1000 of chlorid of calcium, and considerable free CO_2 ; and the Ludwigsbrunnen, which is a gaseous muriated water. The *sprudel* issues from the earth in a strong stream; it contains $2\frac{1}{2}$ to 3 per cent. of chlorid of sodium, 2 to 3 per 1000 chlorid of calcium, and a considerable quantity of free CO_2 , and its temperature ranges from 83° to 96° F. I visited the sprudel baths under the guidance of Dr. Goehler, the first assistant of Dr. Groedel. They are strong saline, effervescent, carbonated baths, which rush with great force into tubs sunk in the floor. These strong gaseous baths have the effect of greatly stimulating the cutaneous vessels, thus counteracting the chilling effect of low temperature. I saw a full bath of 82° F. borne for eight minutes with comfort, the patient emerging from it with a ruddy hue. The *rationale* of these baths has been somewhat obscurely stated by Schott to be a reflex stimulating influence upon the cardio-inhibitory or regulator nerves, improving the quality of the pulse.

Dr. Bezley Thorne and Sir William Broadbent claim that the favorable effect upon the heart and circulation is due to a dilation of the muscular arteries, and subsequently those of the skin by which the heart is relieved from backward pressure. But this would not increase the arterial tension, which is always observed. The experienced hydrotherapist finds a more simple explanation in the fact so often demonstrated that the first impression of cold upon the cutaneous vessels is their contraction. This increases arterial tension by driving the blood to the interior. But it is soon followed if not prolonged, or if neutralized by friction or other stimulus by a dilation which is not due to a paralysis of the vasoconstrictors, as in the case after warm baths, but to the stimulation of the vasodilators and consequent tonic dilation. Dr. Woods Hutchinson, Professor of Comparative Anatomy in University of Buffalo, has recently pointed out that it is probable that the cutaneous vessels possess inherent contractile power, which he denominates the skin heart. This is in accordance with my own clinical observations repeatedly presented before you and elsewhere. In my paper on "The Management of Pneumonia," read before you, I held that the result of local applications of cold to the skin in fever gives rise to an active dilation with maintenance of the tone of the vessels, an active hyperemia, by reason of which the blood is propelled more vigorously through them. The heart is thus relieved, I said on that occasion, not by a *vis a tergo*, as is the case after digitalis, but by a *vis a fronte* formed by broadening

the blood stream in the cutaneous capillaries whose enhanced tonicity aids at the same time in propelling the blood onward; arterial tension is increased, as is evidenced by the better feeling of the radial arteries. This I regard as the *rationale* of the cold compress in pneumonia and of cold baths in infectious fevers, and is the *rationale* of the Nauheim saline baths. The effect is enhanced in the latter by its saline and gaseous constituents, which stimulate the vasodilators just as friction stimulates them in the Brand bath. This is the simple and, I believe, correct explanation of the effect of the Nauheim baths, which afford the heart so much rest, steady its contraction and improve its nutrition by the general tonic effect. These are greatly enhanced by the Swedish movements, the quiet life, careful attention to diet and general hygienic surroundings.

Hot Saline Springs.—This class of springs, which is favored by patients suffering from rheumatic troubles, abounds in Germany. As a good example, I may cite Aix-la-Chapelle, which I visited. This town lies on the main line between Cologne and Paris. The great advantage of Aix-la-Chapelle lies in the fact that nearly all the baths are situated in fine hotels. There is no necessity, as at Aix-les-Bains, for patients to be carried in sedan chairs from the spring to the hotel, as most of the hotels are provided with elevators and invalid chairs. Dr. Beissel claimed other advantages over Aix-les-Bains. The latter, being too gay, offers temptations to invalids for deviating from strict discipline, and that its waters, containing alum and lime in combination with the sulphur, are unfitted for drinking.

Dr. Beissel courteously accompanied me to all the old and new baths. The latter were being constructed in the most approved manner, heated by the water from the springs, which furnish an inexhaustible supply. I took a hot douche-bath, which resembled those for which Aix-les-Bains is so famous. The doucheur holds the hose with his left hand, with the right he envelopes the steam issuing from it and directs it to various parts of the body, grading its force by scattering. A fan is held by the patient to protect the face against scattering hot water.

The entire city is underlaid by the hot springs; in a distance of 1316 meters, the water issues from ten springs, while in the neighboring village of Burtscheid, a line of 1680 meters furnishes twenty-eight springs. Dr. Beissel pointed out to me the Kaiserquelle which has a temperature of 131° F. The coldest spring in Aachen is the Cornelius spring, the temperature of which is 110° F. Chemically these waters are alkaline, sulphurous, chlorid of sodium waters containing little gas, a small quantity of iodine

and bromin. In Burtscheid, a village lying about one mile from Aachen, the springs are of the same chemical composition, but hotter, the hottest being the Muhlbad, the temperature of which is 163° F. I saw children and women take this water to their kitchens in order to save fuel in cooking.

The affections chiefly treated here are chronic skin diseases, chronic metallic poisoning, gout, rheumatism, and syphilis. Indeed the value of these baths in the latter disease have produced such an afflux of syphilitics that the town has obtained quite an unenviable reputation, which prevents purely gouty, rheumatic, and other patients, from frequenting it. At least so I was informed.

My time being nearly exhausted I shall refer briefly to that portion of my subject, in which I am most deeply interested, *viz.*: hydrotherapeutic establishments and resorts. Of these I visited a large number in Germany, Austria, and France. Most of these institutions are situated in beautiful mountain nooks. There the patients may enjoy the purest air and feast their eyes on the most lovely scenery. Some are constructed on a very large scale. The great Augusta Victoria Baths at Wiesbaden is probably the largest institution. Among these may be mentioned Kaltenleutgeber, near Vienna, where the famous Winternitz presides, and Dr. Koehler's institute at Eisenach. The latter is a magnificently appointed building occupying a promontory from which the eye may roam over the loveliest scenery in all Germany, verdure of the deepest hue, well-tilled fields, romantic gorges, nature and art commingling, while just above upon a still loftier eminence lies that historic castle, the Wartburg, the home and refuge of Luther in the days of papal persecution.

Elgersburg, in the Thüringen forest, where the genial Barwinski has long comforted and brought back to health invalids sent by the most famous physicians in Germany, is one of the enormous "wasserkur" establishments, dating back half a century.

At or near each of these three towns mentioned, there are from three to ten smaller water-cure establishments. Allow me to state what is probably familiar to many of you—that the word water-cure means simply water-treatment, the last word being derived from cura—to care for. Its meaning differs, therefore, materially from the English word, cure. I was not favorably impressed with the methods pursued in most of these institutions. A lack of precision, already referred to in the treatment of phthisis, is evident. Water is still administered here in a somewhat inexact manner, little regard being given to pressure, somewhat more, but not enough to temperature and duration. Among

twenty-eight institutions visited by myself, only three had pressure-gauges, none had any arrangement for ascertainably increasing with precision the pressure used, as may be done in the Hydriatric Institute of this city, in the German Hospital of Philadelphia, and other institutions in this country. Only four had fixed thermometers for ascertaining and regulating the temperature of the douches. Despite these apparent defects, the results obtained are marvelous, especially in gastric and nervous diseases. The reason for this success may be found in the fact that educated physicians preside over these institutions and do not entrust the treatment of patients to nurses, but either administer it themselves or supervise the water treatment. Of late years a more exact technic is observed, from which, doubtless, much better results will follow.

In connection with this subject it may be of interest to refer to the *Naturaerzte* with which Germany is now overrun. These are water-cure establishments conducted by all sorts of lay people, who have failed in other vocations. The largest institutions of this kind are in Chemnitz, and near Dresden, Saxony. These are presided over by physicians, and from them emanate most of the laymen who erect institutions. The great institution bequeathed by Zimmerman, a merchant, who claimed to have been cured by water, air, and diet after failure of the best physicians, was described in the *Medical Record*, in a letter contributed by myself, in the fall of 1890.

The sanitarium called Weisser Hirsch, near Dresden, is world-renowned. It lies about an hour from the city, on a wooded eminence occupying many acres of ground, owned and presided over by Lahmann, who is the high-priest of "natural treatment." It is unique in some respects. First, it has the poorest facilities for hydrotherapy which I saw in Germany. Second, it has an open-air cure, consisting of a fenced-in piece of woods, the soil of which is thickly covered with sand. Here men, completely nude, with the exception of light trunks, spend the entire day, playing ball or in other amusements, or lying on boards or cots. These people look bronzed and hearty.

Lahmann himself lives in a hut, the entire southern face of which is open; except in very inclement weather he wears no underclothing or socks, his feet being partly covered with the Kneipp sandals. This mode of dress is followed by most of the patients. Time will not permit further details. Thousands of people resort to Lahmann's institution with more or less success.

I visited some dozen institutions for "nature cure" in various parts of Germany; most of these are beautifully located, but being managed

entirely by laymen the treatment is very crude. It seems incomprehensible, as in Bettelsdorf, in Silesia, for instance, that a merchant is allowed to care for one hundred sick people without a physician. The director told me that his father was cured of rheumatism by water and diet after all the doctors had failed, hence his present vocation. While in Prussia these *Naturaerzte* are permitted to have institutions, in Saxony they are compelled to have a resident medical man.

The extent of my subject has admitted of but brief reference to each portion. It has been my aim to present to you a sketch of my observations in these health resorts which may give you a glimpse of their condition and methods, rather than enter into any theoretical discussion of the latter. In conclusion I may reiterate, as the result of study and observation of the subject, the statement made in my article on mineral springs in Hare's "American System of Therapeutics," Vol. I:

1. The accuracy of the results of balneotherapy is woefully marred by the bias due to one-sided study and observations of men, who, be they ever so honest, are more or less misled by their environment and by their advocacy of waters with which their interests are intimately interwoven.

2. The multiplicity of elements in the therapeutic problem, as bathing, drinking, and the various ingredients in the waters, climate, surroundings, diet and changed mode of life, render safe deductions difficult.

3. The results from drinking mineral waters containing, with the few exceptions of purgative and the strongest saline waters, a minimum of chemical elements, are to be ascribed chiefly, if not entirely, to their hydrotherapeutic effect—being practically the same as drinking pure water in the same large quantities.

4. The result from bathing in mineral waters is chiefly due to the temperature of the water and duration of the immersion. The experiments of Lehman, and others, with baths of ferrocyanid of potassium showed that not a trace was found in the urine, and after lithia baths not even the spectroscope could discover the faintest evidence in the urine.

5. Nevertheless, I believe that visits to mineral springs are of great value, because of the improved hygienic, atmospheric, and scenic conditions, the freedom from care and absence of business pressure, together with the stimulus of amusement and diversion, regular habits, strict diet and hygiene, drinking of large quantities of water which sweeps out effete material, and the valuable effect of baths which is enhanced by the saline, gaseous elements of the water.

A careful study of American springs (Hare's "System of Therapeutics," pp. 515-533) convinces me that we have in this country some of the highest types of mineral springs, and that if the physicians at these resorts would insist upon precision in drinking, diet, exercise, rest, sleep, and the proper adaptation of hydrotherapeutic effects, with the same emphasis as do the physicians at the European resorts, the annual exodus from the country would be greatly diminished.

A fertile field is open to the medical profession of this country, a field which if properly tilled not only would bear good fruit to numberless invalids, real or imaginary, but which would give recreation, change of scene, and work, and satisfactory financial results to many colleagues who now labor in crowded towns and cities during the hot summer months.

HEADACHES FROM NASAL CAUSES.¹

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THE SYRACUSE FREE DISPENSARY.

IN this paper I do not intend to dwell to any extent on the history of individual cases but to give a sort of abstract of experience, selecting as a basis for conclusions only representative cases which have been followed up carefully, a table of which is appended. Neither will I include those headaches associated with inflammatory disease of the accessory cavities, this latter affection having been so comprehensively written up during the past three years.

In a paper on "Hemicrania"² I have called attention to pressures within the nose as a cause of sick headaches and neuralgic affections. At that time it was felt that perhaps an apology was due for venturing on a subject so nearly barren of literature. Now I am pleased to find that others both here and abroad are giving the nasal passages due credit. As early as 1886 Dr. Harrison Allen of Philadelphia published a paper on "Headaches Associated Clinically with Chronic Nasal Catarrh."³ The essay was comprehensive, replete with valuable deductions, and without doubt was the first published on the relation of headaches to intranasal conditions. In a foot-note he mentions a discussion touching on this subject which took place at the New York Academy of Medicine, January 21, 1886, but after his paper was written. In 1888 Dr. John O. Roe contributed a paper, entitled "The Frequent Dependence of Persistent and So-called Congestive Headaches upon Abnormal

¹ Read before the American Laryngological, Rhinological, and Otological Society, Washington, D.C., May 1, 1897.

² *New York Medical Journal*, March 31, 1894.

³ *THE MEDICAL NEWS*, March 13, 1886.

Conditions of the Nasal Passages." ¹ Aside from these, and the mention made of the nose as a factor by Dr. Wharton Sinkler in an excellent article on the "Etiology and Treatment of Migrain" ² I have been unable to find record of any paper relating to this subject by American writers until that produced by myself in 1893.

From all data at command, I think Dr. Hack of Freiburg (quoted by Sinkler) was the pioneer in Europe in recognizing the fact that headaches sometimes come from nasal causes. Maximilian Bresgen of Frankfurt wrote a paper on "The Headaches in Nose and Throat Diseases," ³ a copy of which he has courteously sent me. This article is very clear and concise, pointing out with detail the regions which most commonly produce headaches, and their great frequency as a symptom in nose and throat diseases. At a meeting of the British Laryngological Association, held in London, October 12, 1894, Mayo Collier reported a case of "Headache from a Diseased Middle Turbinal." Dr. J. H. McCassy of Dayton, Ohio, ⁴ in connection with his experience as superintendent of the Kansas State Insane Asylum, says: "As might be expected, headache is alarmingly common among the insane. I am convinced that hypertrophies, vasomotor rhinitis, polypoids, deflections of the septum, catarrh of the ethmoidal, frontal, and maxillary sinuses, etc., are frequently causes of headaches, and in not a few cases of insanity."

For a number of years past the neurologist and the ophthalmologist have had full sway in the treatment of these cases. They have published many valuable books and papers and should receive due credit. One of the recent productions is Corning's on "Headaches and Neuralgia." The author does not even speak of a possible nasal cause in his classifications, though he mentions at considerable length those termed nervous, toxic, bilious, etc. Errors of refraction must, of course, be corrected, but the rhinologist should have a place in this line of work. I have selected from my records thirty cases of cephalalgia that have been referred to me as a last resort by different physicians. These patients on examination appeared to be fit subjects to work upon and treatment was instituted. They do not include those met with in any hospital or dispensary practice, or those who have been mentioned incidentally during the course of ear or throat treatment, where nasal surgery has been a prominent feature, and by means of which their headaches had been cured. In this group of thirty patients I find

that seven claim to have received relief to the extent of about 40 per cent., five 75 per cent., ten 90 per cent., and eight 100 per cent. A careful review and study of their records bring out some interesting points. Sixteen were treated between 1891 and 1894, giving from three to five years in which to judge of results. Ten of these show from 90 to 100 per cent. relief of their headaches. Twenty of the thirty cases were females. The youngest was seventeen and the oldest sixty-five years of age. Sixty per cent. of the whole number were from thirty to forty years of age. Seventy per cent. of these patients appeared to have hemicrania as a result of middle turbinate pressure. Of those reported as showing 100 per cent. relief, the whole number, eight, received a full and thorough operative course. Fourteen, because of their improved condition, stopped treatment before all the visible intranasal contacts and pressures were removed. The remaining eight had a complete operative course, but owing to the sensitive condition of their membranes they are yet having some headaches, though four are found in the 90-per-cent. class. Another notable fact deduced from these thirty cases is that of the sixteen who received a full operative course, twelve report from 90 to 100 per cent. improvement. Experience with other cases not mentioned in this list teaches me that about the same ratio of improvement (75 per cent.) will hold good in all headaches from nasal causes, if each and every point of pressure or contact is thoroughly removed. Operative work on these patients is what gives quickest and most brilliant results. It should be carried out with the fact in mind that the nasal membranes are very sensitive and prone to swell, and a little more of the offending overgrowth than is necessary to absolutely relieve the pressure should be removed, though not enough to impair the natural function of the nose.

Hajek of Vienna attributes the headaches so commonly met with after tamponing the nose and in acute coryza to a stasis. His opinion is that the veins passing through the lamina cribrosa give off one large branch to the dura mater, turn, and again enter the nasal cavities; these become engorged, press against the brain substance, and occasion severe pain. Schreck of Munich looks upon hemicrania, due to nasal and postnasal causes, as partly attributable to the hindered flow of lymph and venous blood from the brain. Dr. Robert C. Myles of New York writes me that in his opinion "vasomotor disturbances of this region or compression of the small nerves in the bony canals of the cribriform plate by the artery or vein will cause headaches under certain conditions." This theory of stasis produced by a

¹ *Medical Record*, August 25, 1888.

² *THE MEDICAL NEWS*, July 19, 1890.

³ *Munch. Med. Woch.*, January 5, 1893.

⁴ *Cincinnati Lancet-Clinic*, September 5, 1896.

retarded circulation, coming as it does from three eminent and independent sources, should receive consideration. Perhaps it will explain why some twenty-five per cent. of our patients have an occasional return of their trouble after all visible pressures and contacts have been removed. According to some neurologists, it may be due to the fact that "all influences exerted upon the human body are to a greater or lesser degree cumulative, and the phenomena following these are proportionate to the response yielded by the receiving nerve-centers." Personally, I think that most of these recurring attacks are produced by the irritable and sensitive condition of the membranes, which favor congestion, with resulting pressure on sensitive areas.

In those cases of headaches from nasal causes which have come under my observation, but two can be recalled in which the patients at the time of their seizures did not show some point or points of contact within the nasal fossæ. Their relapses may be due to stasis as mentioned above. It has been noticed that they as well as others are kept very comfortable if weekly or biweekly stimulating applications be made in order to keep the relaxed and sensitive membranes in proper tone. The treatment that appears to act best in producing this result is a gentle spraying of the parts with iodole and ether, the patient being instructed to breathe through the nostrils quickly if the application produces too much smarting pain. Three grains to the ounce of this mixture is a good strength for these tonic treatments, and the same combination, preceded if necessary by a two-per-cent. cocain spray to allay smarting, is very efficacious in reducing acute or subacute nasal and postnasal inflammation. In fact, it is good in temporary turgescence from any and all causes.

Without doubt some cases of migraine are of the nature of "nerve storms" and are closely allied to epilepsy, but it appears very probable that these nerve storms are primarily brought about by some irritation of a nerve filament, such as is produced by contact of the inner surface of the middle turbinate body with the septum.

My paper on "Hemicrania," written in 1893, contained the proposition that there are a certain number of headaches which can be cured, or at least relieved, by the proper treatment of pressures or contacts within the nose. Added experience during the past four years, together with the observations of other workers, has amplified this idea until it surely appears that we are safe in advising those who come to us with a history of persistent or recurring neuralgia, clavus, sick headache, pressure on top of the head, or the deep frontal pain commonly termed

catarrhal headache, to have their nasal and post-nasal passages put in the best possible condition. I am about ready to believe that from 70 to 80 per cent. of all cases of headaches of hemicranial order are due to removable causes located within the nasal passages or adjacent air spaces.

As intimated above, the treatment *par excellence* for these obstinate cases in which we find evidence of nasal disease of whatever nature is the correction of that disease by the means indicated. If we have reason to think that the trouble comes from the accessory sinuses these must be drained. If the space between the septum and a middle turbinated body is too narrow, or if this same body is overgrown anteriorly or presses against the outer wall of the nose, preventing free access of air into or drainage of the sinuses, it must be reduced in some manner. If bony shelves, membranous or cartilaginous thickenings causing pressure are found, these should be taken care of. In some cases one fails to find any of these deformities, and perhaps at the time of examination there are no points of contact, but it will be noticed that the membranes are of a peculiar bluish-red color, and have a sensitive or relaxed appearance which is an indication that within the next half hour there may be some localized spot of pressure. This condition does not require operative interference, but will usually respond to persistent and stimulating treatment, together with proper regulation of the habits, manner of living, exercise, etc., and, according to Roe, if the patient resides in the Lake region, avoiding too great a quantity of night air in the sleeping apartment.

One word further, regarding those patients suffering from an attack of headache, who ask for temporary relief. Inspection of their nasal passages will perhaps show marked pressures in the olfactory region, which may be due to an acute or subacute inflammation without much chronic disease, and without osseous deformity or overgrowth. About ninety per cent. of these patients can be relieved in one or a few treatments by cleansing the nostrils, and using the iodole and ether mixture, preceded by a light two per cent. cocain spray, as described above. Sometimes this will have to be repeated in four or five hours, but one treatment usually breaks up an attack. Cases number 22 and 27 in the appended table well represent this class.

The desire to be brief has hindered me from quoting other authors, who have written on headaches, and forced me to leave out many things that I would have liked to mention; still I hope that proof enough has been brought forward to cause the rhinologist to take a more active interest in reflex headaches.

No.	Name.	Age.	Began treatment.	Relieved.	Intranasal conditions.	Remarks.
				Per cent.		
1.	Mrs. K.	32	April 16, 1892	40	Deep bony shelf pressing into r. mid. turb.	Severe sick headache each week.
2.	Miss J.	32	Aug. 18, 1892	40	Enlarged mid. turb.	Bimonthly sick headache.
3.	Mrs. F.	45	Nov. 5, 1892	75	Enlarged mid. turb.	Bimonthly hemicrania.
4.	Mrs. L.	35	Dec. 3, 1892	40	Septal shelf pressing inf. turb.	Severe hemicrania at times each week.
5.	Miss H.	25	Oct. 7, 1892	100	Septal shelf pressing inf. turb.	Frequent hemicrania.
6.	Mr. K.	56	April 14, 1892	100	Enlarged mid. turb. with thickened membranes.	Severe hemicrania trimonthly.
7.	Mrs. Y.	55	Feb. 23, 1892	100	Septal shelf and deflected septum.	Clavus and general headaches.
8.	Dr. S.	30	Mar. 23, 1892	90	Deflected septum pressing r. mid. turb.	Hemicrania once a week.
9.	Miss G.	32	May 9, 1892	90	Deflected septum, large shelf, and mid. turb.	Severe hemicrania. Died of general tuberculosis in 1895.
10.	Miss F.	25	Nov. 17, 1892	75	Deflected septum, large shelf, etc.	Severe hemicrania, when she has colds.
11.	Mrs. C.	35	Jan. 17, 1893	75	Enlarged mid. turb.	Severe weekly hemicrania, pressure on top of head.
12.	Mrs. R.	50	Oct. 26, 1893	90	Atrophic rhinitis, enlarged turb.	Persistent general headaches almost constant.
13.	Miss C.	17	June 24, 1893	90	Enlarged mid. turb.	Headaches and pressure top of head bimonthly.
14.	Mr. C.	38	May 18, 1893	100	Septal shelf and thickened mid. turb.	General headaches.
15.	Miss B.	19	Mar. 23, 1893	100	Septal shelf and swollen mid. turb.	Severe sick headache bimonthly.
16.	Mr. M.	36	April 20, 1893	100	Septal shelf and swollen mid. turb.	Severe sick headaches bimonthly.
17.	Mr. S.	38	May 21, 1894	40	Long shelf pressing into mid. turb., etc.	Severe hemicrania once a week.
18.	Miss R.	26	June 27, 1894	75	Deflected septum, mid. turb., filling infundibula, r. s.	Hemicrania bimonthly.
19.	Prof. K.	36	Jan. 17, 1894	75	Thick membrane and enlarged turb.	Severe and frequent hemicrania.
20.	Dr. L.	27	Dec. 29, 1894	90	Cartilagenous thickening, pressing mid. turb., l. s.	Severe frontal headaches, trimonthly.
21.	Miss S.	65	April 18, 1894	90	Deflected septum pressing l. mid. turb.	General headaches.
22.	Mrs. B.	33	May 11, 1894	90	Thickened membrane on mid. turb. and septum.	Frequent headaches.
23.	Miss W.	33	Nov. 2, 1894	90	Mid. turb. pressure on septum.	Neuralgia and severe headache.

No.	Name.	Age.	Began treatment.	Relieved.	Intranasal conditions.	Remarks.
				Per cent.		
24.	Mrs. H.	32	Jan. 7, 1894	100	Mid. turb. pressure on septum, filling infundibula.	Very frequent, severe sick headaches.
25.	Mr. C.	35	June 4, 1895	90	Thickenings and enlarged mid. turb.	Severe neuralgia, and hemicrania.
26.	Mr. N.	28	Feb. 6, 1896	40	Septal shelf, and thickened membranes.	Catarrhal headaches.
27.	Mrs. L.	40	Oct. 1, 1896	40	Swollen and sensitive membranes over mid. turb.	Severe hemicrania, when she has cold.
28.	Dr. B.	40	Oct. 10, 1896	100	Septal shelf, and sensitive membranes.	Frequent general headaches.
29.	Mrs. T.	37	Nov. 5, 1896	90	Enlarged mid. turb.	Very severe, sick headaches twice a week.
30.	Mr. S.	45	Oct. 2, 1896	40	Enlarged mid. turb., and polypoid membranes.	Hemicrania twice a week.

THE MICROSCOPIC EXAMINATION OF MILK.¹

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BEFORE considering the benefits to be derived from the microscopic examination of milk, it may be well to consider briefly the subject of milk as an infectious agent. It is well known that the presence of the bacillus of tuberculosis has often been demonstrated in the milk obtained from tuberculous cows. Clinical experience, especially with babies and young children who derive their entire sustenance from this fluid, would also go to show that many cases of intestinal tuberculosis are due to drinking milk from tuberculous animals.

Milk also is a very favorable medium for the development of many other pathogenic bacteria, and the accidental introduction of such bacteria as the typhoid bacillus, the anthrax bacillus, or any other of the pathogenic organisms may give rise to the specific diseases caused by these germs in those who drink such a contaminated material. It is not the purpose of this paper to deal further with this subject, since the microscope could hardly be used as a routine method of deciding such conditions, even when present. The microscope is often of great

¹ From the laboratory of the Health Department, Baltimore, Md.

use, however, in detecting a serious contamination in milk, namely, pus; and the presence of this product of inflammation in any considerable quantity generally points to the existence of some inflammatory condition of the teats or udder of the cow supplying this fluid. Such a condition in cattle is known as "garget," and this disease has been studied by numerous observers, and the causes which bring about this trouble have been duly noted. This work was mentioned in a paper, entitled "An Epidemic of Purulent Inflammation of the Milk-ducts Affecting Seventy Cows," by W. R. Stokes and A. W. Clement, State Veterinarian, in which it was stated that most investigators consider garget as caused by some local injury to the teat or udder, followed by a secondary invasion of the injured area by the pyogenic bacteria. The organisms may cause an extensive inflammation, and the milk will then not only contain many pus cells, but what is more injurious, the various bacteria, which have produced the pus in the udder.

The above article also described an epidemic of purulent inflammation of the milk-ducts affecting seventy cows. This condition did not arise from any local injury to the udder, but seemed to be due to the infection of a few of the herd by means of a sore finger of a milker, and the gradual transference of the disease from animal to animal, through the hands of the other milkers. Garget is a far more frequent condition than many people suppose. The writers have been struck with the number of instances in which it has been detected in large or small herds supplying various individuals or communities.

One should not be too hasty in condemning a sample of milk merely because it contains a few pus cells. It has been the custom at the laboratories of the city Health Department of Baltimore to make a microscopic examination of the samples of milk as they reach the city consumer. The milk is first centrifugalized two and one-half minutes by means of the Lentz centrifuge. Ten cubic centimeters of milk is used in each tube. The supernatant fluid is then poured off and the sediment is spread evenly over the surface of an ordinary glass slide. The specimen is then dried over the flame of a Bunsen burner, or in a water evaporating oven. Ether is then applied until all superfluous fat is removed, and the slide is stained with Löffler's methylene blue. This method not only forms a ready means of detecting the presence of pus, but if the specimen be taken from any one cow, an excessive amount of pus cells can also be noted. The examinations are made with a one-twelfth-inch oil immersion lens. It has been found from a number of examinations that most

samples of milk mixed from a large herd will contain a few pus cells. On the other hand, when the samples have been taken from individual cows, many more pus cells have been found. Inspection of such animals later showed that such a condition was due to suckling calves, local abscesses, or purulent suppuration of the milk-ducts—processes which at times might have escaped even the notice of a skilled observer. From what has been said, it will be seen that milk as a general food product must certainly at times contain bacteria capable of producing disease.

Let us next consider the evidence in favor of the view that such bacteria when introduced into the intestinal canal may give rise to such conditions as acute or chronic gastro-enteritis. The writers are not aware of any experimental work upon animals which proves that the introduction of the ordinary pus organisms into the intestine will give rise to conditions resembling these just mentioned. We are in possession of some facts, however, which are perhaps quite as convincing.

Dr. Booker of Johns Hopkins University, in his most elaborate and complete researches on "Summer Diarrheas of Infants," brings out very clearly the relationship existing between certain forms of gastro-enteritis and the streptococcus. In a certain number of these cases which were marked by symptoms of general infection, the streptococcus was found in cultures from the intestines, and the presence of these bacteria could also be demonstrated in the various inflammatory intestinal lesions by means of special bacterial stains. Eleven cases of streptococcus enteritis were also mentioned as reported by other authors. There can be but little doubt, therefore, that the streptococcus is largely concerned in producing certain forms of intestinal inflammation, while the researches of Escherich and others show that this organism is only an occasional inhabitant of the intestinal canal, and when present that it is only to be found in small numbers.

In view of what has been stated a detailed account is offered of an epidemic of mild gastro-intestinal irritation in which the most reasonable explanation of the cause seems to be the drinking of milk containing the products of acute inflammation from a diseased cow. The following notes were kindly made by Dr. Henry Lee Smith of Baltimore during the absence of the writers from the city:

In one of the educational institutions of this city, some of the inmates were suddenly seized with marked nausea, vomiting, and purging. Dr. T. J. King was called upon professionally, and states that during the next few days a number of other children were similarly attacked, making twenty in all. The ages of the young girls were from eight to four-

¹ *Maryland Medical Journal*, January 9, 1897.

teen years, and the symptoms were not of sufficient gravity to require the patients to be put to bed. After careful inquiry, it was found that the food had been both simple and nutritious, and reasoning by exclusion, the milk was thought to be at fault.

A mixed specimen was carefully bottled at the dairy, and sent to the Health Department for microscopic examination. The supply was ordered to be discontinued until favorably reported upon. Meanwhile there were no further interruptions in the good health of the inmates in the institution.

The writer, accompanied by Dr. Cornelius, Veterinarian to the Health Department, visited the herd supplying the milk, and found one of the cows suffering from a swollen udder. The dairyman thought that it had been bruised by one of the neighboring cows lying on it. The hands of the men employed about the stables were examined and found free from infected wounds. The examination of the affected udder showed a slight abrasion, with marked swelling, tenderness, and elevation of temperature. The teat was well cleaned, and a thick, yellowish fluid was squeezed from the milk-duct, and caught in a sterile tube. There was no contact between the teat and the tube.

A microscopic examination showed that this fluid consisted almost entirely of pus cells, together with numerous streptococci; and a plate culture in agar gave a pure growth of an organism corresponding in every particular to the streptococcus pyogenes. This organism did not prove virulent when inoculated into a white mouse. Separate mixed specimens were then taken from the milk of each of ten cows of the herd. These were later centrifugalized and stained according to the method described above. The milk of eight cows was found practically free from pus, but the mixed specimen from the entire herd contained many pus cells and streptococci, and the milk from two of the cows contained an average amount of about 10 to 20 pus cells to the microscopic field.

The owner of the herd showed a commendable willingness to co-operate with the Department, and these two cows, together with the first diseased cow, were removed from the stables. An examination of this same stable, made one week later, from the separate specimens from eleven cows, showed that their milk was free from pus, and a second examination made at the end of another week, showed that the milk from the entire herd was practically free from any purulent material.

From the experience above narrated, we thought it probable that the milk from many individual cows must contain varying numbers of pus-cells. We next undertook a series of investigations in order to arrive at a definite conclusion concerning the number of cows practically free from pus, and the varying number of pus cells present in the milk of cows kept under different conditions. After carefully washing the teats, the first milking from each of the four teats was drawn into a sterile tube. While still fresh,

the milk was examined according to the method described above. The averages are all based upon counts of ten microscopic fields with the one-twelfth-inch oil immersion lens and represent the average number of pus-cells in each field. The summary below will show at a glance the difference between cows kept under varying circumstances. They are graded according to the following conditions:

No. 1 consists of one hundred cows in the country, kept in a well-ventilated stable with good roomy stalls, and good pasturage. They are fed while in the stable on bran, ground corn, and hay. The cows are curried and cleansed daily. The herds are inspected by competent veterinary surgeons, and all sick animals are isolated. The usual precautions regarding cleanly milking are observed.

No. 2 consists of fifty cows in the country having badly ventilated stables, narrow stalls, and bad pasturage. They are fed on distillery grains, cut hay, and bran, the precautions mentioned above as regards inspection and cleanly milking not being observed.

No. 3 consists of one hundred cows kept in the city, always confined to stables, with narrow stalls, no ventilation, light, or pasturage. They are fed on brewery grain, distillery slops, bran, and hay. The cows, as a rule, never leave the stable until they go dry or are taken out to be exchanged. The milk was furnished by the city veterinarian, Dr. George C. Cornelius, who was careful to select different sections of the city, and who personally superintended the drawing of the milk. A summary of the results of the examinations of the three grades is as follows:

Grade No. 1 gave a general average of 1.1 pus cells to the field.

No. 2 gave an average of 11.3, while No. 3 showed 19.2. In herd No. 1, practically no pus organisms such as streptococci or staphylococci were found. Herd No. 3 showed streptococci present in large numbers by cover slip in eight instances. The regular nucleus of the epithelial cell enabled us to exclude these bodies in our counts. The milks mixed from the various herds of grade No. 3 showed streptococci, other bacteria and pus. The highest number of pus cells in any one cow was 158.5 to the field. The lowest in grade No. 3 was .1, and there were only 5 which gave this percentage, while in grade No. 1 there were 45. Seventy-five cows gave an average in grade No. 1 of less than one cell to the field, while in grade No. 3, out of 100 cows, there were 12; 93 cows out of 100 in grade No. 1 gave less than 5 cells to the field, while in grade No. 3, 38 gave this average; 98 cows out of 100 in grade No. 1, gave less than 10 cells to the field; in grade No. 3, 54 out of 100 showed this number.

Conclusions.—Garget, or inflammation of the ud-

der and teats, is a not infrequent condition among the many herds supplying milk to various cities or communities.

Milk from such animals often contains many pus cells, and the accompanying organisms of suppuration.

The study of the epidemic just described, as well as the important work of Booker and others, certainly strongly suggests that such milk is capable of causing the various forms of gastro-enteritis, especially in children and infants.

The microscopic examination of the centrifugalized sediment of the milk from a herd of cattle if found to contain an excessive amount of pus, should suggest a careful inspection of the herd.

The chance of infection from drinking milk from a large herd can be lessened by making a microscopic examination of the centrifugalized specimen from each cow, and by the exclusion of such cows from the herd as may be found to contain an excessive amount of pus in their milk.

The standard for exclusion must of necessity be arbitrary, but following the method above described, an average of more than five pus cells to the field of the oil immersion lens should exclude an animal from the herd.

Our results lead us to the conclusion that cows kept in the country, under the conditions noted in regard to grade No. 1, will furnish milk less capable of causing disease than the milk furnished by grades No. 2 and No. 3.

In Baltimore, a city of 500,000 inhabitants, there were 412 deaths from cholera infantum during the year of 1896. This disease is more prevalent among children using cows' milk. We believe that proper legislation looking to the examination of dairy herds and the supervision of dairy stables in the entire State would prevent many deaths from the various intestinal inflammatory diseases. Such legislation seems already practically embodied in "An ordinance to better protect the public health," approved by the Mayor of Baltimore, April 21, 1896, and which might be applied to the entire State.

We would respectfully suggest that the proper food be more clearly stated, and that distillery slop and brewery grains be prohibited as an exclusive diet. It is not claimed that milk which has not undergone such tests will necessarily cause disease, but certainly the adoption of such measures will tend toward securing a purer milk supply and lessening the danger of disease through infected milk. We are indebted to Dr. James F. McShane, Commissioner of Health, for his valuable advice, and the interest which he has shown in our work.

CLINICAL MEMORANDUM.

TUMOR OF THE SPINAL PIA, FIRST CERVICAL SEGMENT, MISTAKEN FOR HYPERTROPHIC CERVICAL PACHYMEINGITIS.¹

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THE symptomatology of intraspinal tumors, whether they be of the dura, the pia, or the medulla, is not so definite and unvarying that the recording of such an occurrence, with a description of the location and confines of the lesion, should not be of deep interest to every physician. In the following history there are many hiatus, but we shall endeavor to make it serve as a text for a few remarks concerning the differential diagnosis of tumor of the spinal meninges and of the cord and hypertrophic cervical pachymeningitis, for which this case was mistaken by the physician who saw him when the symptoms of the neoplasm were well developed.

C. L., a single man, thirty-six years old, of intemperate habits, was admitted to the City Hospital on February 5, 1896. He was said to have had rickets when a child. About twenty years ago, that is, in his seventeenth year, he contracted a chancre, which was followed by the usual secondary manifestations of syphilis. Treatment for the syphilis was carried on only while there were external syphilitic manifestations. Until the present illness he had been quite well. Nine months before entering the hospital he complained of pain in the back of the neck. This gradually crept toward the front of the neck and implicated the right side of the face. The pain at first was sharp and lancinating, but after a few months its character changed, and it became lancinating only at intervals; in other words, the pain, although continuous, became paroxysmal. At this time the patient was unable to move his head readily. He assured us that this spasticity or rigidity of the neck occurred in attacks, and that these coincided with the paroxysms of pain. After a month, or longer, that is, about four months before coming under observation, the head and neck became fixed.

Two months before he came to the hospital he remarked that he was losing the strength of the left arm, and he complained of paroxysmal pains in this region. Upon admission, he complained of being extremely nervous, that he could neither sleep nor eat, that he suffered pain in the back of the neck and head and in the left upper extremity, that the left side of the body was becoming feeble, and that he was growing weaker day by day.

The following conditions were noted in the examination made when he was admitted: The patient maintained the cephalic extremity in a fixed position, and when he turned to the right or to the left the entire body rotated. The left side of the body, particularly the left hand, was weaker

¹ Read before the New York Neurological Society, June 1, 1897.

than the right. The knee-jerk of the left side was much exaggerated, and the triceps and wrist reflexes of the same side were lively and exaggerated. When the patient walked he dragged the left foot and progressed with a swaying movement of the body—a slightly hemiplegic gait. There was no muscular atrophy nor any deformity.

The strength of the left upper extremity became progressively impaired, and he soon was unable to use it. The left hand assumed a slightly flexed condition, but not the "claw-hand" shape. There was no impairment of the sphincters up to this time. The bowels had been very constipated. On May 7th a diarrhea set in, which lasted until the time of his death, a month later, and which was not influenced in the slightest by treatment. Shortly after the onset of the diarrhea there was persistent incontinence of feces. The vesical sphincter did its duty until near the close of life.

The patient made pretty continual complaint of severe pains in the neck and both upper extremities and, later, of pain extending into the legs. As the disease pro-

FIG. 1.



Longitudinal section of spinal column, showing relative position and size of tumor.

gressed, the rigidity of the neck became less, the left upper extremity, which was in a state of beginning contracture when he was first examined, was almost flaccid, and all the extremities became relaxed, yet, withal, the deep reflexes, the knee-jerks, and the elbow-jerks on both sides were very much exaggerated. Whether or not the state of sensory conductivity was investigated cannot be stated, as there is no record regarding it. On February 2d the diagnosis of pachymeningitis cervicalis hypertrophica was entered on the record. The patient continued to complain bitterly of pain, and about a week before his death, on June 8th, he became delirious, and remained so to the end. An autopsy was made a few hours after death. The spinal canal was laid open from the base of the skull to the sacral region. Nothing noteworthy was encountered until the spinal pia came into

view. This was seen to be distended and glistening. On puncturing it over the dorsal region, a quantity of clear cerebrospinal fluid escaped, and the pia then lost the distended appearance. On the posterior surface of the pia, beginning with the first dorsal segment, small white patches or flecks were seen scattered irregularly down as far as the lumbar region. On examination they were found to be calcareous. The pia was neither thickened nor adherent, and the dura was glistening and translucent. The cord itself did not present any abnormality as it lay in the spinal canal, and the cervical region was equally free from disease, as thus seen, as any other portion of the cord. The cord was then left *in situ* and the cranium opened.

The skull was of usual thickness. The veins of the diploë were somewhat congested. The membranes of the brain were of normal appearance. There was no excess of intermeningeal fluid, and the brain itself appeared normal. The encephalon and the spinal cord being completely exposed, a tumor was found lying on the posterior surface of the cervical cord, reaching from the lower border of the oblongata as far as the second cervical segment. The tumor was of the pia, but lay immediately against the cord substance, and measured 3.2 cm. in length, 2 cm. at the widest part, and 1½ cm. at the narrowest end, which was directed upward. The tumor projected slightly into the foramen magnum, but did not exert any pressure at this level. The encroachment upon the spinal cord seemed to begin about half a centimeter below the oblongata-cervical junction. Further examination of the brain failed to show any deviations from the normal.

The *post-mortem* examination of the body revealed an extensive pyelitis of the right kidney, a similar condition, though less marked, of the left, and a very pronounced hypertrophy of the bladder walls. The liver showed interstitial changes, and the apices of the lungs beginning tuberculous involvement. No changes were found in the intestines which would account for the diarrhea from which the patient suffered during the last few weeks of his life. The extremities were in a relaxed state, and careful measurements made at this time showed no difference in the size of the two sides.

On macroscopic examination of the tumor in the recent state, it had the appearance of a sarcoma, or gliosarcoma. It was of a dark reddish color, and was very firm to the touch. It was hardened in alcohol, the cord being placed in Müller's fluid. Microscopic examination of the tumor showed its essential structure to be that of a spindle-cell sarcoma with relatively enormous blood-vessels, some of which, especially the smaller ones, were occluded with hyalin material. Here and there throughout the tumor were signs of recent small hemorrhages, indicating the rupture of the smaller degenerated vessels. In the environment of the vessels which showed most profound degeneration large foci of cheesy degeneration were found.

Examination of the cervical cord, hardened in Müller's fluid and stained with hematoxylin according to Weigert's method, showed that the compression to which the cord had been subjected had largely expended itself on the

crossed pyramidal tracts, in which it had caused descending degeneration of a mild nature, and on the columns of Burdach, which showed an ascending degeneration of a degree even milder than that in the pyramidal tract. Aside from the change in the contour of the cord, insignificant vascular changes, and what appeared to be a slight degree of perivascularitis in the ventral horns, the cord was normal. To recapitulate briefly, the symptoms in this case were:

1. Pain, at the onset, in the back of the neck, later extending into the side of the face, and into the upper extremities, and later yet into the lower extremities.
2. In the beginning the pain was continuous, and of a dull, irritating character; later it occurred paroxysmally, and was of a lancinating nature.
3. A feeling of tension and spasticity in the cephalic extremity, and to a lesser degree, in the upper extremities, more particularly in the left arm.

some symptoms were lacking, the appearance of which one should perhaps always await before consenting to make a diagnosis of hypertrophic cervical pachymeningitis. The occurrence of the symptoms of the latter affection fall into two distinct periods or epochs, corresponding to well-defined anatomic conditions. These are, first, a period of pain and rigidity of the muscles of the cephalic and upper extremities which indicates encroachment of the pathologic process upon the spinal roots, particularly the posterior, and, second, the period of paralysis, contracture, atrophy, and deformity, particularly of the upper extremities, which correspond to the implication of the substance of the cord by the morbid condition and degenerative changes of a secondary nature in the peripheral nerves.

The pain of cervical pachymeningitis is not unlike that complained of by the patient in this instance. It is located at the outset in the back of the neck, but soon

FIG. 2.



Cervical cord at the level of the third cervical nerve, showing degeneration of the pyramidal tracts and column of Goll.

4. Progressive loss of strength in the left upper extremity, and to a lesser degree, in the left lower extremity.
5. Exaggeration of the deep reflexes. In the beginning this exaggeration was of the left side alone, but later increased myotatic irritability was universal.
6. Progressive flaccidity of the parts which had previously shown a state of tension or spasticity.
7. Progressive and uncontrollable diarrhea.
8. Symptoms referable to deranged intracranial circulation, pressure, and delirium.

If we contrast these with the symptom complex, which Charcot and Joffroy first claimed was sufficiently characteristic and constant of a form of cervical pachymeningitis to entitle it to individual classification, we shall see that although the symptoms, which the patient had, belong to the complex of symptoms constituting the latter disease,

extends toward the front, and to the sides of the face. Later, the large joints of the upper extremities often are the points to which the intensest suffering is referred. At the outset, this pain is continuous, but after a few months or less it occurs in paroxysms. The rigidity of the upper part of the body and the paresthesia which occur at this time remind one of cervical caries.

Until other symptoms develop, it is impossible to make a positive diagnosis. The paralysis and atrophy of the muscles which follow and the deformity are considered to be quite typical. The paralysis of the upper extremities and the atrophy is mainly in the domain of the ulnar and median nerves. This atrophy causes the development of the "claw-hand," which is perhaps the most constant feature of cervical pachymeningitis. It is the immediate result of flexion of the fingers, due to paralysis or degeneration of the median nerve, and extension of the wrist,

on account of the ulnar-nerve disability, the action of the posterior interosseous being unopposed. Atrophy of the muscles of the upper extremities may be very extensive and the spasticity and fixation of the joints be as pronounced as in a case of amyotrophic lateral sclerosis. The disturbances of sensibility are not constant and vary with the degree of encroachment made by the morbid process on the dorsal surface of the cord and the posterior roots. Some degree of sensory disturbance is always present. The occurrence of other symptoms with hypertrophic cervical pachymeningitis points to secondary changes in the cord due to implication of the descending tracts, principally, and are those of a more or less diffused myelitis.

In the case here reported, then, it would appear that there were lacking symptoms that should be present to warrant a diagnosis of cervical hypertrophic pachymeningitis. Moreover, the course of the disease, the unfolding of the symptoms, and especially the irradiation, the character and intensity of the pain, should have suggested the possibility of intraspinal tumor. It is unfortunate that no record was made of the sensory disturbances, as it would count for much in favor of a tumor if the distribution of some form of anesthesia had been present with anything approaching regularity.

The question of the symptomatology of intraspinal tumors is to-day a very legitimate subject for debate. There would seem to be nothing like unanimity among different writers as to what constitutes the symptomatology of growths situated within the spinal canal. As a matter of fact, when it is said that the symptoms depend very largely upon the position occupied by the tumor, to a less extent upon the location, and to a comparatively slight degree upon the size and nature of the growth, all is said that can be stated truthfully. We have become so accustomed to a moderately unvarying symptom complex resulting from intracranial growths, and which, so far as we know, is dependent upon a perversion of intracranial pressure, that unthinkingly we believe that something similar should be present in the case of intraspinal tumor. As a matter of truth, there is not. Intraspinal pressure counts for very little or nothing, and this because of the entirely different interrelationships between the coverings of the cord, constituting the important lymph spaces, and those existing between the brain and its coverings.

It seems to me a matter of sufficient importance to deserve especial attention that oftentimes motor symptoms are principally root symptoms, even until late in the course of the disease. Before they cause cord symptoms, death usually overtakes the patient, unless the tumor is of the cord itself, or unless it is a tumor that grows rapidly and thus causes early spinal-cord implication. In the case reported, the root symptoms dominated until the end, and the symptoms were never of such a nature that it could be said that the substance of the cord itself was involved. The obstinate diarrhea from which the patient suffered was, I venture to believe, a symptom referable to the sympathetic system, and was caused by implication of sympathetic fibers entering with the posterior roots. Whether or not there were other sympathetic vegetative

symptoms I cannot say, as the patient did not come under our observation until a few days before his death, when he was in a state of profound collapse, and no notes had been made of such conditions in the case-book.

It would be easy to theorize on the relationship of the disease of the urinary organs to the sympathetic system and to the cervical cord, but I prefer merely to record its occurrence.

MEDICAL PROGRESS.

The Bacterium Coli in the Urinary Passages.—The presence of the bacterium coli in the urinary passages according to MELCHOIR (*Centralbl. für d. Krankh. d. Harn. und Sexual-Organen*, vol. viii, p. 242) is responsible for most cases of infection of the bladder, and also for most cases of pyelitis, pyelonephritis, and nephritic abscess. These affections are not to be regarded as separate disorders, but as results of one common cause—the infection locating itself according to circumstances in one or the other portion of the urinary tract. These views are not those of the writer alone, but are shared by numerous others whose published opinions are quoted by him.

GRAF (*Deut. Med. Woch.*, No. 38, 1896) examined, bacteriologically, two cases of pyelonephritis and found in one the bacterium coli and in the other a bacillus similar to this. The origin of these bacilli was not evident, nor could Graf determine the route by which they reached the kidney.

"Bi-Polar Pressure" in Cases of Doubtful Fracture.—A writer in *La Presse Medicale*, May 15, 1897, calls attention to a means of differentiating between contusions and fractures—a point which, by the way, must have occurred to many others. As the pain in contusions may be very great, it is desirable to distinguish this pain from that caused by a break in the bone. If lateral pressure is made this cannot always be done, but, on the other hand, if pressure is applied at the ends of the bone—on elbow and shoulder in case of the humerus—pain will be present in fracture and absent in contusion. This method of examination is spoken of as "bi-polar" pressure.

Albuminuria of Delirium Tremens.—LIEPMANN (*Arch. für Psych.*, etc., 1896, vol. 28, No. 2) examined seventy-two patients suffering from delirium tremens, of whom fifty-six, or seventy-six per cent., had albuminuria, which, in forty cases, was only transitory. In sixteen cases the albuminuria appeared to be permanent. Seven of these patients died; five of them had nephritis, but the cause of the albuminuria in the other two was not evident.

The most important symptom, as an index of the delirium, was the pulse, which increased with commencing mental disturbance, and fell when the brain began to clear. In most cases there was no fever. Usually the albuminuria rose and fell with the pulse, and the delirium had no connection with the fever. The degree and kind of delirium was not different in those cases without albuminuria than in those in which it was present.

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SATURDAY, JULY 3, 1897.

WHEN MAY A SYPHILITIC MARRY?

THE earliest date after infection at which a syphilitic may marry without danger of communicating syphilis directly or by heredity is gradually being advanced by those who have carefully studied the subject. Some years ago Fournier and Besnier said that an individual properly treated might marry with impunity four years after the initial lesion. Recently Besnier has extended the time to five years. Even this long period seems too short in some instances. Thus, Morel-Lavallee, in the *Rev. de Therapeut. Med.-Chirurg.*, November 15, 1896, has collected from the literature thirty-seven cases, to which he adds a thirty-eighth, in all of which infection took place more than five years after the initial lesion. In all of these the contagion was spread from a so-called secondary lesion.

Perhaps the most remarkable paper recently published on this subject is that of Tarnowski, which was read before the last Congress of Dermatology held in London. Of 1000 cases of syphilis which were under observation for more than five years, all exhibited condylomatous lesions for three years or more, while 802 exceeded that period by two years.

No less than 200 (twenty per cent.) showed "secondary" symptoms after five years, and in 31 cases there were secondary lesions after ten years. It ought, therefore, according to Morel-Lavallee, to be the invariable rule to allow at least five years to elapse before marriage; but this should not take place even then until a year has passed since the disappearance of secondary symptoms in a person not given to recurrence of mucous plaques or erosions of the lips or tongue.

A NEW SPECIFIC FOR TUBERCULOSIS.

THE report of a new treatment of pulmonary tuberculosis by a modified tuberculin elaborated by Hirschfelder at San Francisco, which was published in the last number of THE MEDICAL NEWS, will doubtless attract considerable attention from clinicians and pathologists.

From its pathologic standpoint the article gains consideration as presenting the results of carefully conducted laboratory experiments. That the tubercle bacillus should be destroyed by the action of its own product slightly altered, as by oxidation, is not at all improbable but rather in line with some well known observations in bacteriology. Such a view is, however, not in accord with the generally accepted opinion that specific immunity is the result of an entirely new substance different from the bacterial toxins and produced in the organism as a secondary result of the action of these toxins and bacteria. Proceeding on this basis Koch has been laboring for years in the endeavor to so thoroughly distribute the tubercle bacillus throughout the organism as to excite the production of this immunizing agent by natural processes, claiming that in no other way can the antitoxin of tuberculosis be secured in sufficient concentration for use in therapeutics.

That by simply heating tuberculin with peroxid of hydrogen a product should be obtained identical with that resulting from very complex metabolic processes in the animal organism is not impossible but seems almost too simple to be true. As a rule albuminous principles treated chemically in the test-tube do not correspond in action to closely related principles isolated directly from the animal body, and it seems probable that if the antitoxin of tuberculosis is to be manufactured it must be done in the animal body rather than in the thermostat.

As for the premises on which Hirschfelder proceeds, it is of little moment to point out that simple access of air is almost certainly not the essential curative agent in successful operations for tuberculous peritonitis. It may be suggested also that the prolonged heating of tuberculin with peroxid of hydrogen may very well produce, in the toxin, other changes than oxidation.

An examination of the results obtained by the treatment shows much information to be desired. A New York physician would send a patient falling in Hirschfelder's first class to California with a good prognosis as to recovery within a year. Many such results are seen at Saranac. The exact conditions under which these patients were treated are therefore essential data in judging of the efficacy of the special treatment. Further, if oxytuberculin is the anti-toxin of tuberculosis, we should like to know the efficacy of this agent in limiting the course of tuberculosis in inoculated guinea-pigs. The lack of evidence from experimental pathology will especially strike those best fitted to judge of the probable value of the remedy, *viz.*, experimental pathologists.

But whatever fears may arise as to the ultimate fate of the new treatment, it cannot be classed with the host of ephemeral specifics constantly being thrust upon the profession. Hirschfelder's work bears the stamp of careful and competent study on a distinctly scientific basis, and whether ultimately successful or not, the investigator's claims seem to deserve the consideration of the medical public.

ECHOES AND NEWS.

Pauper Centenarian Dead.—The Coroners' Office was recently notified of the death from consumption of a female inmate of the Almshouse on Blackwell's Island. The woman was 105 years old.

French Congress of Surgery, 1897.—The eleventh session of the French Congress of Surgery will commence in Paris on October 18, 1897. The following subjects will be discussed: (1) "Contusions of the Abdomen;" (2) "The Indications for Operation and the Treatment of Cancer of the Rectum."

Death of Dr. William C. Wey.—Dr. William C. Wey died of apoplexy on June 30th at his home in Elmira, N. Y. He was born in Catskill, N. Y., in 1829, and graduated at the Albany Medical College in 1849. He was President of the State Medical Society in 1871, and for many years was Health Officer of Elmira.

Nail Fired into His Tongue.—A young man of Saugerties, N. Y., recently made use of a wire nail to dislodge a cartridge from a revolver. While he was thus engaged, the revolver was discharged and he received the full charge in his face. Later the nail, which measured three and one quarter inches, was found embedded diagonally across the tongue.

Special Instruction for Feeble-Minded Children.—A report on the district schools of London brings out the fact that about one per cent. of children of school age are so far below the normal in physical and mental power as to require special training. A separate class-room is to be allotted to these children, where they will receive a modified kindergarten training and suitable physical exercise.

Pilgrims and Quarantine.—The *Lancet* says that at Mecca "pilgrim diarrhea" has become an annual factor which has never yet been dealt with, and there is even a suspicion that for the last few years cholera has been endemic there. As Turkey has, up to the present time, done nothing in the matter, it is suggested that Europe insist that these pilgrimages be conducted on cleanly and decent lines.

To Sue for His Medical Diploma.—It is said that a colored student of the Rush Medical College, Chicago, has begun suit in the Circuit Court for a writ of mandamus compelling the college authorities to issue to him a diploma. The student claims that the diploma was withheld on the charge that he had copied answers from other students in the course of his final examination. This he denies, and demands proof of the charges or the granting of a diploma.

Cremation of Garbage.—The village of New Brighton, S. I., has been greatly exercised over the question of the disposal of garbage. A crematory was built in which the garbage was burned, but some of the residents in its immediate vicinity protested against the bad odors. An injunction was granted prohibiting the use of the crematory, but, upon it being shown that the bad odors were due to faulty working of the plant, the latter was remedied and the injunction removed.

Blindness Caused by Drinking Essence of Peppermint.—The news comes from Washington, D. C., that a Wisconsin Indian Agent has reported two peculiar cases of blindness occurring on the Vermillion Lake Reservation. Two Indians drank essence of peppermint as a substitute for whisky, one taking almost ten ounces clear, and in each case blindness followed within a few hours. A case was recently reported in Philadelphia in which blindness occurred after drinking a quantity of Jamaica ginger.

New York State Board of Health.—A meeting of the State Board of Health was held in New York City on June 29th. A communication from Attorney-General Hancock advised the Board that it has the right to take such steps as it sees fit, independent of any opposition that may be offered, to abate nuisances which have been complained of. The report of the sanitary condition of the State announces that a decrease of 1,000 deaths over the cor-

responding period for the previous month has been reported.

Tornado Neurosis.—The people of St. Louis are suffering from a new disease called tornado neurosis. According to a physician in that city, women and little children die from time to time as a result of the nervous shock caused by the tornado of a year ago, and the repeated shocks caused by the alarm which they experience whenever there is a thunder-shower. The latter is largely due to sensational newspapers which publish greatly exaggerated bulletins whenever a storm is predicted by the Weather Bureau.

Haffkine's Plague Prophylactic.—The results of Professor Haffkine's inoculations against the bubonic plague in India afford a striking instance of the value of antitoxic methods of prophylaxis. It is indeed remarkable that the introduction into the body of the mixture which results from the growth of the plague bacillus in a mass chemically so complicated as a mixture of native "ghee" and bouillon should cause the inoculated to suffer about twenty times less than the non-inoculated, living under the same conditions and exposed to the same infection.

Not Necessary to Die.—Dr. C. A. Stephens, of the Boston University Medical School, is reported as saying he is convinced that the progress of brain science will enable mankind to successfully overcome decay and its climax—death. He further states his belief that death at seventy years or thereabouts is due to the fact that generation after generation is born into the world expecting to die at that time and therefore die. He expresses the opinion that if children were brought up to believe they would live forever, the life limit would gradually be extended in the course of several generations.

The Wearing of Clothing Disastrous to the Savage.—A writer in *Harper's Magazine* claims that civilization will rapidly exterminate the savage races. The first thing done for the black heathen is to make him wear uncomfortable clothing, in which he sweats and breeds poisonous microbes with horrible fluency. He never changes his clothing, and when he gets wet he knows no better than to dry it by sitting close to a fire. In this way he contracts fever, which undermines an otherwise robust constitution. The so-called Christian natives disappear rapidly after being clothed in the armor of civilization.

The Lancet and the Jubilee.—*The Lancet*, which was founded fourteen years before Victoria ascended the throne, gives in the issue of June 19th a brief résumé of the advances made in medicine during her reign. In the chapter on surgery credit is given America for the discovery of ether. Knight of New Haven, is mentioned as having in 1848 employed digital compression in cases of aneurism. Weir Mitchell is referred to as having been the first to perform suture of nerves. Halsted's operation for the cure of inguinal hernia is mentioned, and credit given Marion Sims for removing a gall-stone from the cystic duct in 1878.

Horseless Carriages for Doctors.—Dr. Charles C. Booth of Youngstown, Ohio, seems to deserve the distinction of

being the first physician in this country to adopt a horseless carriage for use in his practice. The doctor is inventive, and has devised what he calls a motor cab, which he has used for several months. The cab is capable of making a speed of ten miles an hour on a level, and will climb a grade of from ten to fifteen feet to the hundred at the rate of five miles an hour. It seems that in sections of the country where the roads are uniformly good physicians will soon be able to do away with the expense of keeping horses, and will rely upon bicycles or horseless carriages.

Pills Under the Hammer.—In a recent article with this title in the *Pharmaceutical Era*, Dr. Windolph says: "'Lead pills' have their place in military warfare; but the physician in battling with disease should select his ammunition for other qualities. I make no comment on the solubility of a pill, whether coated or uncoated, which is of sufficient hardness to penetrate a pine board. I feel justified, however, as a pharmacist, in contending that the interests of the physician, the patient, and druggist as well, are better served by pills extemporaneously prepared, or, in any event, by the use of such manufactured pills as are known to be in a permanently soluble condition."

Physiologic Testing of Drugs.—The physiologic activity of medicinal agents is just now receiving much attention from physicians, and methods have been devised whereby it can be directly tested, entirely apart from chemical analysis. In the near future pharmacists may be required to guarantee not only that the drugs they sell are pure, but that they possess the required ability to act on the systems of those to whom they may be administered. *The Pharmaceutical Era* says: "It is well known among investigators that there are certain classes of remedies which cannot be standardized by any chemical means. Some of these remedies are the most important in the whole Pharmacopeia. The group of heart tonics is perhaps the most notable, including as it does a very large number of drugs that are constantly prescribed by the physician. Of this group of heart tonics, undoubtedly digitalis is the most important."

Health and Population.—Some official figures recently appeared in London which gave great surprise to social economists. They were filed with the registrar-general, and showed that the death-rate was relatively lower in the larger cities of England than in the small ones. The rate in London was 15.5 per 1000 inhabitants; in Liverpool, 19.9; in Hull, 15.8, and in Sheffield, 19.1; but in the town of Plymouth it was 23.5; in Salford, a suburb of Manchester, 25.9; in Bolton, 25.8, and in Burnley, 25.1. Though the sanitation of large cities is, in the main, better than that in the smaller towns, the transient population is larger in the former and, moreover, the big cities usually maintain a larger number of public, penal, and charitable institutions, hospitals, asylums, and prisons, which add materially to the death-rate. In the city of New York, for instance, as the last figures of the Board of Health show, nearly 10 per cent. if, indeed, not quite

10 per cent., of the interments are pauper burials made at the public expense and from public institutions usually.

New Appointments and Changes in Bellevue's Faculty.—

The following new appointments have been made in the Faculty of Bellevue: Dr. Charles L. Dana, Professor of Diseases of the Nervous System; Dr. Henry C. Coe, Clinical Professor of Gynecology; Dr. Henry H. Rusby, Professor of Materia Medica and Pharmacology; Dr. John A. Mandel, Adjunct Professor of Physiological Chemistry; Dr. William H. Park, Lecturer on Bacteriology and Hygiene; Dr. George D. Stewart, Professor of Anatomy; Dr. Austin Flint, Jr., Professor of Obstetrics and Clinical Midwifery; Dr. Herman M. Biggs, Professor of Therapeutics and Clinical Medicine and Adjunct Professor of Principles and Practice of Medicine. Dr. Joseph D. Bryant has given up the Chair of Anatomy and has been appointed Professor of the Practice of Surgery and of Operative and Clinical Surgery. Dr. Lewis A. Sayre has been made Emeritus Professor of Orthopedic and Clinical Surgery. Dr. Reginald H. Sayre has been appointed Lecturer on Orthopedic Surgery. Dr. Carlos F. McDonald has had the department of Medical Jurisprudence assigned to him in addition to the Professorship of Mental Diseases. Dr. D. Hunter McAlpin, Jr., has been promoted to Professor of Gross Pathology and Clinical Registrar.

Disappearance of Plague from Bombay.—According to the *British Medical Journal*, the epidemic of plague which has raged in Bombay for nearly a year is practically over, although a few new cases will probably be reported during the coming twelve months. But 15,000 deaths are recorded in a population of nearly 800,000—a very low mortality compared with that of the 1666 plague in London, which was estimated at forty per cent. of the entire population. The sanitation of Bombay and the active medical measures taken to prevent the spread of the disease have undoubtedly saved thousands of lives. Apparently nothing will shorten the duration of an epidemic, as is shown by the fact that in Hong Kong, in spite of its almost perfect water supply and modern drainage and sanitary and medical supervision, the plague lasted as long as it did in Canton, where there is absolutely no sanitation whatever. But it is evident that sanitation is of the greatest importance in limiting the number of persons attacked during an epidemic, and that improved sanitation is the weapon by which the dread scourge should be fought. The following essential points should be borne in mind in the event of plague becoming epidemic in any civilized community: First, that there is no such thing as a mild outbreak of true bubonic plague. Second, that private interests must stand aside for the time being, and that full powers must be granted to a supreme body to deal with all sanitary measures in the manner which seems best calculated to lessen the number of persons attacked.

The Jubilee Number of the British Medical Journal.—In commemoration of the Queen's Jubilee, the *British Medical Journal* issued June 19th a very large number which

is entirely devoted to a detailed record of the progress of the medical sciences during the Victorian period. The review is illustrated by seventy-five cuts, one of which is a portrait of Marion Sims, the only American thus honored. After mentioning as main factors in the advance of medicine, the invention of instruments of precision, the discovery of causes of disease, improvement in the means of preventing disease, simplification of treatment, antitoxins and organic extracts, anesthesia, and antisepsis, an exhaustive review is given of the progress of every department of medicine during the past sixty years. Much prominence is given to the work done by subjects of the Queen, although occasional mention is made of that done by Americans. In the section on obstetrics mention is made of observations in America concerning contracted pelvis and difficult labor. In that on gynecology special mention is made of the Johns Hopkins Hospital and of Howard Kelly and his staff; Marion Sims and Bozeman are spoken of in connection with operations for the repair of lacerations of the perineum and for vesico-vaginal fistula; Emmet's operation of trachelorrhaphy is also mentioned; Ephraim McDowell is the only American mentioned in the chapter on abdominal surgery. The Weir-Mitchell treatment of neuroses is referred to. In the article on anesthesia, no mention is made of Morton as the discoverer of ether.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

A LAW FOR THE INSPECTIONS OF BAKERIES—THE SUMMER EXODUS OF PHILADELPHIA MEDICAL MEN—BLOCKLEY NOTES—DR. J. M. DA COSTA—AN OBNOXIOUS PIECE OF LEGISLATION—VITAL STATISTICS FOR THE PAST WEEK.

PHILADELPHIA, July 3, 1897.

ALTHOUGH the butcher must submit the meat he intends selling to a close inspection before he may dispose of it, and the dairyman is compelled to submit his products to official surveillance before they reach the consumer, the baker and the confectioner, until the passage of the present Bake-Shop Law, which officially went into effect a few days ago, have always managed to evade a close inspection of their methods of manufacture by the authorities. But this large class of manufacturers will now be compelled to comply with regulations which have for a long time governed other producers of food-stuffs, and to serve the public with a product whose purity and cleanliness in preparation is approved by the inspectors of the State Factory Department.

The new Bake-Shop Law proves to be a most sweeping—and, if properly enforced, will be a most valuable—act of legislation, and its literal application will result in the reconstruction of hundreds of bakeries throughout the city and the closing up of many more. It includes in its jurisdiction bread bakeries, confectioneries, macaroni factories, and pretzel and pie bakeries; regulates the hours for employes, and forbids the employment of all but healthy persons; it also provides for the proper ventila-

tion, drainage, and plumbing of all buildings and rooms in which the manufacture of this sort of food is carried on.

No one who has not investigated this matter personally can have any conception of the unsanitary condition of many of the bakeries in the poorer sections of this city, and it was high time that a law was passed by which these foci of disease and filth may be eliminated. It will be interesting to watch the practical application of this measure, with its ins and outs of political complexities; but it is to be hoped that the enforcement will be thorough, and the results a gain in the sanitary condition of the community.

The summer exodus has begun in earnest, judging from the boarded-up fronts which the offices of many prominent medical men present and from the numberless signs of "Patients are referred to Dr. So-and-So until September 1st" which one sees at every turn. The stay-at-home laity, in some sections of the city, keep their doctor with them the whole year round; but to hunt for your physician, should he happen to live in the center of town, would be, in many instances, a disappointing and hopeless endeavor. Dr. James C. Wilson has gone to Rye Beach, N. H., for the month of July, and intends to pass the remainder of the summer in the Maritime Provinces of Canada. Dr. Edward Willard Watson is at Castine, Me., where he will spend this month and next. Dr. Edward P. Davis is at Marion, Mass., for the rest of the summer. Dr. Henry C. Chapman, Dr. John B. Shober, and Dr. S. Madison Taylor are spending the season, as usual, at Bar Harbor, Me. Dr. Thomas G. Morton has taken a cottage at Cape May, N. J., for the season. Dr. Thomas G. Ashton will spend the summer at Atlantic City, N. J. Among the recent departures for Europe may be mentioned Dr. Arthur V. Meigs, Dr. Charles P. Noble, Dr. John H. Packard, Dr. P. S. Donnellan, and Dr. Horace Y. Evans. Dr. William W. Keen leaves the latter part of July for an extended trip through the Northwest, including Alaska. Dr. William G. Porter will spend August at his country house at Fairfield, Conn.

The daily population at the Philadelphia Hospital (Blockley) for the past year averaged 3494 persons in all the departments of the institution. The insane department showed the greatest gain in patients, having cared for 830 more cases daily in 1896 than were treated ten years ago, an increase of 210 per cent. A curious phase of the Department of Charities and Correction, the administrative body governing Blockley, may be found in the *personnel* of the Out-door Staff of district physicians, which is so composed that the discriminating poor may choose for gratuitous medical attendance at their homes either a regular practitioner or a homeopath, depending upon the patient's individual mark of intelligence. The announcement that twenty-five of these medical make-shifts have been added to the out-door service would appear to indicate their popularity with the lower classes; but it is gratifying to note that this medical tinkering is wholly extramural in character, for all the internes of the hospital are graduates of regular schools of medicine.

At the annual commencement of Harvard University,

held on June 30th, the honorary degree of LL.D. was conferred upon Dr. Jacob M. Da Costa. Dr. Da Costa delivered an oration before the alumni association of Harvard during the meeting of that body this week.

The Board of Health is up in arms against a bill awaiting the Governor's consideration, which proposes to dispense with the present law making marriages returnable to the Health Officer. It is inconceivable what legislative stupidity called into existence this bill, which not only aims to destroy the continuity of the valuable records of marriages, births, and deaths kept for the past twenty-seven years by the Bureau of Vital Statistics, but, should it become a law, would obviously prove a decided obstacle in the settlement of certain legal and social questions which might arise in the future; one occasionally requires proof of one's marriage, and the Board of Health's protest will probably result in the continuance to citizens of Philadelphia of this privilege.

The number of deaths in this city during the week ending July 3d was 492, an increase of 64 over those of the preceding week; of the total, 226 occurred in children under five years of age, cholera infantum causing 58 fatalities. The returns of contagious diseases for the week show a total of 205 new cases, a decrease of 64 from last week; 63 were diphtheria, 99 scarlet fever, and 43 enteric fever; there were 25 deaths from diphtheria, 7 from scarlet fever, and 6 from enteric fever.

OUR VIENNA LETTER.

[From our Special Correspondent.]

OFFICIAL REPORT OF THE AUSTRIAN PLAGUE COMMISSION—ETIOLOGY, CLINICAL FEATURES, TREATMENT AND TRANSMISSION OF THE PLAGUE—FEVER IN LEUKEMIA WITH NO OTHER CAUSE BUT THE BLOOD CONDITION—PROFESSOR MONTI ON THE DIFFERENTIAL DIAGNOSIS OF ANGINAS IN CHILDREN.

VIENNA, June 12, 1897.

THE commission sent by the Austrian Government to Bombay to investigate the etiology, pathology, and clinical features of the pest, returned last week. Its official report was read at the session of the Imperial Academy of Sciences of Vienna on May 20th. As the clinical and pathologic material, through government influence, was entirely in their own hands, the members of the commission were, in the words of the report, "in the pleasant position of absolute independence, and their conclusions are the result entirely of their own observations and experience."

As to etiology, they confirm the generally accepted opinion that the bacillus found and described by Yersin and Kitasato is the cause of the disease. These bacilli may be found in large numbers in all lymphatic tissues, and especially in the spleen. While the disease may be conveyed to animals by direct inoculation, the members of the commission observed its spontaneous development only in rats. Mixed infection plays an important rôle in the severity and variety of the symptoms noted in the course of the disease. All the ordinary microbes seem to find a favorable culture-medium in the blood of affected

persons. The streptococcus, the diplococcus pneumoniae, and the staphylococcus were observed with special frequency. Three types of the disease could be distinctly differentiated, the first being a septicemic hemorrhagic form characterized by septic hemorrhagic buboes, and by hemorrhages in the walls of neighboring venous trunks. This form, by far the most common one, presents a specifically characteristic swelling of the spleen, and specific changes in all the lymphatic tissues, the lymph glands, the intestinal follicles, and the follicles of the mouth, throat, and tonsils. The second form is a septic pyemia, with metastases to the internal organs, especially the lungs, liver, and kidneys. The third form is a primary pest-pneumonia—a specific confluent, lobular pneumonia.

The favorite points of entrance for the infecting material are, in the order of importance; (1) The skin, with consequent lymphatic involvement. This is by far the most frequent mode of entrance. (2) The lungs, occurring in a very much smaller number of cases; and, (3) the tonsils, a very rare form, but of interest as exemplifying the importance of that ever-open road to infection. In these cases the glands beneath the jaws showed the characteristic buboes. No case of infection through the intestinal tract was noted.

Besides the symptoms usually noted, both serum and nuclear albumin were always present in the urine, though in small amounts. The chlorids were always considerably diminished. No blood was found in the urine of any of the patients, and the ophthalmoscope never revealed the presence even in frankly hemorrhagic forms of the disease of hemorrhages into the retina. Slight leucocytosis was noted.

The diagnosis was difficult only when the characteristic buboes were absent, as in the pneumonic form of the disease. The presence of the bacilli in the sputum was then diagnostic. As to treatment, none of the pharmaceutical remedies used seemed to have any effect on the course of the disease. The investigators did not observe the success which has been reported from the use of Yersin's antitoxic serum, though they saw it employed in a number of instances. As to Haffkin's treatment with sterilized cultures of the bacilli, the official report is not so definitely unfavorable. The results of certain experiments and further observations are awaited. In private conversation, however, some members of the commission have expressed themselves as absolutely without confidence of any good resulting from this method of treatment.

As to the danger of the transmission of the pest to other countries, the probability of such an event does not seem at all likely. The plague is not easily carried in fomites, and very ordinary precautions will suffice to prevent its transmission in this way. Under proper medical supervision, which need not be of extraordinary character, the danger of its being transmitted to other countries by affected persons is extremely small. The presence of large numbers of rats on shipboard at all times, and their now thoroughly known liability to the disease makes the coming of ships from parts where the disease is prevalent always a reason for strenuous precautions.

The report of a case of leukemia from Professor Schrötter's clinic here has just been published in which for months before death there had been a daily evening rise of temperature of 2.5° to 3° C. The autopsy made with extreme care by Professor Weichselbaum himself showed no traces of a tuberculous or septic process in the system. Quinin never had any effect on the fever. The other antipyretics seemed only to cause abnormally lowered temperatures when the drop came, but did not lessen the rise. The fever itself seemed to have no effect on the leucocytes.

Professor Schrötter, in a clinic a few days ago, called attention to the fact that besides leukemia, other of the serious blood changes—chlorosis and the severer forms of anemia—were accompanied under certain circumstances by this tendency to temperature disturbances. The explanation would seem to be that a ferment intoxication occurs which is due to the absorption of certain elements not present in the condition of normal blood equilibrium, but liberated when that equilibrium is disturbed—elements which are of great importance in certain conservative processes, as clotting, etc.

Professor Monti, at the Polyclinic, has just concluded a series of lessons on anginas in children. As was to be expected from so well known a clinical teacher, the points given were very practical and were strikingly presented. As to differential diagnosis, of course, the important point is the bacteriologic examination in all cases where there is a membrane present. This requires practically twenty-four hours of time, and meantime treatment must be begun in private practice, for if the case is one of diphtheria valuable time may be lost by delay. The external appearances then have not lost their importance and will usually serve to indicate whether diphtheritic treatment and isolation should be instituted at once. Punctiform patches of membrane on the tonsils usually indicate only infection by staphylococci—a follicular tonsillitis. When the membrane occurs in larger patches, but is limited only to the tonsils, especially if a piece of the membrane removed from the throat is not tough and consistent but crumbles readily between the fingers and does not show a fibrinous network under the microscope, it is streptococcic in origin. The true diphtheria membrane is not so apt to be localized to the tonsils, and owing to its fibrinous character does not crumble easily.

Any membranous affection in the throat of a child calls for isolation, for even in the mild staphylococcic form the microbes have an acquired virulence that makes them contagious for children living under the same conditions, and the lesions they produce make easy points of entrance for diphtheria bacilli.

As to treatment, besides the antitoxin local measures must not be neglected. Gargling is usually out of the question, for even with older children it cannot be practised with sufficient frequency to be of any practical therapeutic value. Sprays are so evanescent in effect that their repetition often enough to be of use would seriously worry the patient, so that the indication seems to be always for the use of powders. These remain long enough in contact with diseased parts to have the desired antiseptic

effect. As all the throat bacilli grow better in an alkaline medium, only acids should be used in the treatment. Boric acid and tannic acid, especially the latter, are the favorites in Monti's children's wards at the Polyclinic. Iodol or iodoform in powder are used in the severer cases. Second attacks of genuine diphtheria Monti considers to be much rarer than is usually thought. Diphtheria leaves a throat in a state of lowered vitality, and staphylococci and streptococci readily find a lodgment in it, but true diphtheria recurs almost as rarely as other children's diseases.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

ROENTGEN RAYS WITHOUT GERMICIDAL POWER—THEIR USE IN THE DIAGNOSIS OF DISEASES AFFECTING THE DEVELOPMENT OF THE SKELETON—THE RESULTS OF CALOT'S FORCIBLE REDUCTION OF THE DEFORMITY IN POTT'S DISEASE—IS HYDROCEPHALUS HEREDITARY?—THE TREATMENT OF ACUTE ECZEMA BY PICRIC ACID—CONGENITAL ORIGIN OF MOVABLE KIDNEY—MUSCULAR RHEUMATISM FOLLOWING GONORRHEA—THE EFFECT OF ANTISYPHILITIC TREATMENT UPON TUBERCULOSIS.

At the session of the Academy of Sciences, held May 3, 1897, SABRAZES and RIVIERE stated that *the Roentgen rays have absolutely no effect upon the bacillus prodigiosus*, and the cultures of this bacillus, although exposed to the action of these rays, showed absolutely no change in their chromogenic properties, morphologic characteristics, or vegetability. In frogs exposed to the influence of the rays, the action of the leucocytes was not effected, either as regards their number or phagocytic powers. In some cases there seems to be an increased flow of lymph. Furthermore, a frog's heart is not modified in its rhythm until after an hour's exposure to the rays.

At the session of May 17th, SPRINGER and ŠERBANESCO demonstrated the *advantage of the use of Roentgen rays in the study of different troubles affecting the growth of the skeleton*. A most remarkable fact was furnished by myxedema. In this affection the radiograph showed a persistence of certain infantile conditions, even at the age of thirty-four years. In hereditary syphilis the arrest of development appeared to be due to a premature ossification with persistence of the cartilage. In alcoholic children the cartilage is thin, irregular, and prematurely ossified. In tuberculosis, either hereditary or acquired, the cartilage persists and its ossification is delayed. In short, a number of diseases produce alterations in the epiphysal cartilage and in its method of ossification. In such affections the radiograph gives a new physical sign easily appreciable and most useful for diagnosis. Investigation along this line will also serve as a guide to treatment, for if the cartilaginous zone is opaque all treatment having for its object increase in the growth is useless, as this has been definitely arrested.

At the session of May 12, 1897, BRUN reported to the Society of Surgery that he had performed *redressement brusque upon two patients suffering from Pott's disease with deformity*. In one case the lesion was three and

one-half months old and disappeared under pressure, apparently without the production of such a large anterior cavity as is brought about by this operation upon the cadaver. In the other case the projection had been noticed for five months. The immediate result of treatment was satisfactory.

MICHAUX reported a satisfactory operation of this character upon a child aged nine years who had had a spinal deformity for three years.

BROCA reported three cases in which he had tried this operation; in one case all his strength was insufficient completely to reduce the deformity, which had existed a long time. In the other two cases, one of two-years' and one of about three-months' duration, the deformity was corrected without trouble. No unpleasant symptoms followed in any of these cases.

At the session of May 26th, MENARD made a plea for the conservative treatment of hip-joint disease in children because of the spontaneous cure which so often follows osseous tuberculosis in children. The fact that conservative treatment requires so much time is less of an argument with children than with adults. The majority of cases of coxalgia should be treated at the onset by immobilization, and not by continuous extension. The affected limb should be put in a position of medium abduction in order to avoid inward rotation, which is the principal danger of a vicious fixation in coxalgia.

KIRMISSON was opposed to all forcible correction of deformity in tuberculous troubles whether of the spine or hip-joint, or situated elsewhere.

At the Medical Society of the Hospitals, May 14, 1897, MARIE presented a man, aged thirty-nine, who seemed to be suffering from *hereditary hydrocephalus*. With him the lesion was congenital. His intellectual gifts were small except in the mechanical arts. Two children showed the same cranial condition as their father. This would seem to indicate that hydrocephalus is of hereditary origin.

CHASLIN was doubtful if the condition of the head, either in father or children, was really hydrocephalic.

At the session of May 21th, GAUCHER mentioned the good results which he has had in *the treatment of acute eczema by picric acid*. It is applicable only to the vesicular and weeping variety. As in cases of burns, he employs a one-per-cent. watery solution, saturating the compresses with it, and leaving them in place two days. At the end of this time inflammatory reaction is already subsiding, through the same application is repeated every two days as long as is necessary. The picric acid has a calming effect and rapidly relieves the itching. Gaucher believes that this treatment will be found applicable to other acute superficial inflammations of the skin, for example, in cases of pemphigus.

COMBY has six times observed a movable kidney in children. All of the cases were in females, four of the children being from ten to sixteen years of age. They had suffered for years from dyspepsia and pain in the right side. The other cases were found at autopsy in syphilitic infants, aged one and three months respectively. In both of the latter instances the trouble was bilateral and con-

genital. Comby suggests the hypothesis that all cases of floating kidney are congenital in their origin, or at least that an unusually long pedicle predisposes the kidney to be displaced by influences later in life, such as tight-lacing, and frequent pregnancy.

JACQUET mentioned a case of *muscular rheumatism* occurring in a man aged nineteen, *affecting the muscles of the loin, abdomen, and pharynx, it being secondary to an acute attack of gonorrhea*. The pain in the throat and upon swallowing preceded by at least forty-eight hours any evidence of inflammation in the mucous membrane, so that the inflammation in the latter undoubtedly seemed to be secondary to the affection in the neighboring muscles.

At the session of the Society of Dermatology and Syphilography, May 20th, FOURNIER presented a patient, aged forty-eight, who two months previously had had upon his hands and arms ulcers and granulations having *all the appearances of tuberculosis*. He denied syphilitic infection, and there was no reason to doubt his word. A diagnosis of tuberculosis was further justified by the fact that the patient was a chronic tuberculous subject. However, an injection of calomel was given him, and a stomatitis quickly produced, and there was a decided improvement in the ulceration. Second and third injections were made, and in a short time there was complete recovery.

AUGAGNEUR had seen tuberculous ulcerations in the person of a boy, aged eighteen, cured once by operation, but recurring after twelve years they disappeared after some weeks under treatment with iodid of potassium. A cure also followed the use of this drug in a patient who had an ulcer upon the left leg thought to be tuberculous.

JACQUET and SABOURAUD recalled similar instances in which undoubted tuberculous lesions disappeared under mercurial treatment.

The moral which FOURNIER drew from these facts was that the reaction which follows antisyphilitic treatment does not infallibly determine the diagnosis.

Vienna.

A CASE OF DIABETES MELLITUS THOUGHT TO BE NEPHRITIC IN CHARACTER—A SIGN OF TRICUSPID INSUFFICIENCY—HEMORRHAGE FROM THE FEMALE BLADDER, ITS CAUSES AND TREATMENT—THE VALUE OF CARBONIC-ACID BATHS—THE APPLICATION OF THIERSCH GRAFTS TO THE SURFACE OF A CAVITY.

At the session of the Medical Club, held May 5th, KOLISCH read a paper upon *diabetes mellitus*, referring to the fact that there are cases which are with difficulty classified either as "light" or "severe." As an illustration, he mentioned that a woman, aged twenty-five, who was troubled with thirst and frequency of micturition, came to him for treatment. The urine contained a great quantity of sugar. Thirst and polyuria diminished under a rather strict diet, and emaciation ceased. The specific gravity of the urine was about 1040 and the daily quantity about 1200 cubic centimeters (forty ounces). It was found impossible, even under a strict diet, to reduce the quantity of sugar below five per cent. Even when hydrocarbons were removed from the diet the sugar still made its appearance, but still without emaciation. Under the

circumstances, one had no right to speak of this case as one of "severe" diabetes. By testing the urine hourly after hydrocarbons had been ingested, it was found that it contained sugar only for a few hours after a meal, and, similarly, when albumen alone was given, the amount of sugar was greatest four or five hours after a meal.

KOLISCH described this case as one of tachyglycosuria and thought that the lesion might be in the kidney. As a matter of fact, the kidney secretes sugar whenever the blood contains even a fraction over the normal amount. In this case investigation of the blood showed that it contained no increase of sugar, which is characteristic in diabetes of kidney origin. This would also explain the absence of polyuria. The writer did not attempt to say whether this was a disease by itself or simply an early stage of ordinary diabetes.

TELEKY thought that a patient whose urine contained sugar, but who presented no other symptoms, should not be described as a diabetic. HERZ did not believe that in the case reported the lesion was confined to the kidneys, as the liver also must have been affected. SINGER thought the proof that the blood did not contain an excess of sugar was insufficient, as, if present, it might have been variable from time to time.

KOLISCH said, in reply, that although not many examinations of the blood had been made, for the reason that the patient could not bear it, yet the fact that examination was made and yielded a negative result at a time when the urine contained sugar, was good proof that there was no hyperglycemia. He thought one is justified in calling such a case diabetes, inasmuch as the presence in the urine of sugar is the one invariable symptom of the disease, and we know too little about diabetes to make a diagnosis when this symptom fails.

At the session of May 12th, BRAUN discussed *the signs of tricuspid insufficiency*. This may be either relative, produced by excessive dilatation of the right ventricle, or functional, as a result of imperfect action of the papillary muscle. He mentioned a case of tricuspid insufficiency in which, a short time before death, systolic pulsation appeared in the veins of the neck, while in the cardiac area pulsation could be seen in three places—the usual pulsation over the apex of the heart in the fifth left interspace, a double pulsation in the third left interspace (the first being lower than the second), and a third pulsation in the second interspace to the left of the sternum and close to it. This pulsation began as a pre-systolic one and grew stronger during the systole, which it outlasted. Braun had proved by autopsy that this pulsation in the second left interspace could emanate only from the right auricle or its appendage, and he therefore regards its occurrence as a reliable symptom of tricuspid insufficiency only to be seen in connection with a considerable amount of dilatation.

KOLISCHER spoke of *hemorrhage from the female bladder*. The use of the endoscope and cystoscope has shown that many of the theories in regard to this subject are false. Hemorrhage occurring before the stream of urine has its origin in the urethra. The most frequent causes of it are polyps, which are really angiomas, and

gonorrhea; in the latter trouble therapeutic measures, such as the introduction of too hard medicated pencils may bring about hemorrhage, with severe results. It was previously supposed that the passage of cylindrical blood-clots was absolute evidence of hemorrhage either from the ureter or kidney. The cystoscope has shown that such is not the case.

Hemorrhage from the bladder may be due to new growths, inflammation, injury, as by instruments, or to alteration in the blood-vessels. New growths are a far less frequent cause of hemorrhage than is usually supposed. Here, too, the commonest cause is gonorrhea. Malignant tumors in the vicinity may produce degeneration of the blood-vessels of the bladder, with resulting hemorrhage. This takes place, for instance, in carcinoma of the uterus. Chronic inflammatory processes produce excrescences in the vicinity of the urethral orifice, and if these are torn off during urination or as result of examination, hemorrhage follows. The cystoscope has shown also that the bladder, even in women who have not borne children, may contain varices, and these are liable to burst and produce troublesome hemorrhage.

The treatment in all of these cases is the introduction of cold water, preceded if necessary by a curettage. The introduction of styptic substances, such as chlorid of iron, is dangerous. Tamponing the bladder is not to be advised. The most radical measure is suprapubic cystotomy. In using the cystoscope to establish the diagnosis of tumor of the kidney, at the time of examination perhaps no blood may be seen to issue from the mouth of the ureter, although the urine invariably contains blood. Very often in such a case pressure in the lumbar region will cause blood to flow from the ureter and thus establish a diagnosis.

At the session of May 19th, RUDINGER discussed the value of baths containing carbonic dioxid, which were first employed at Nauheim, where there are natural springs containing this gas. The attempt to produce such baths by a mixture of carbonates and hydrochloric acid has proved unsatisfactory. If the compressed gas is simply allowed to flow through the water of the bath, it almost all escapes, but an apparatus has been devised by Lippert which mixes the water and gas before the water is allowed to flow into the tub, and by this apparatus the water can be charged with gas up to fifty per cent. of its value. Rudinger has devised an improvement by which the water is made to take up one and one-fifth volumes of the gas in a short space of time.

REITHOFER has employed these baths with excellent results in neurasthenia, myalgia, neuralgia, and for the lancinating pains of tabes dorsalis.

HERZ, who studied the treatment at Nauheim, was in many respects disappointed. One woman, whose aortic insufficiency was said to have been much benefited, was found by him never to have had an aortic lesion. He also saw several cases in which the baths and accompanying gymnastic exercises were followed by tachycardia and an increase in the area of cardiac dulness. At Nauheim the patient's head remains in an atmosphere charged with carbonic bioxid, while those who prescribe the artificial

baths are careful to see that the patient breathes pure air during the bath.

At the session of the Imperial-Royal Society of Physicians, held May 14th, GERSUNY mentioned two instances in which he attempted to apply *Thiersch grafts to the surface of a cavity*. In the first case, diphtheria had produced an almost complete cicatricial stenosis of the larynx in a child one year and nine months of age, and breathing was only possible through a cannula in the trachea. Gersuny divided the larynx, excised the cicatricial mass, and covered the circular denuded area, which was left with a graft taken from the thigh, and in order to keep it in place the cavity was tamponed and the skin sewed together over it. In eight days the tampon was removed and the flap was nicely united. The cannula was kept in position for some time, and the larynx was dilated with bougies and tubes, as there was some tendency toward contraction. The cannula was at last dispensed with and the child breathed normally.

In another case, in which over an inch of the urethra was obliterated, the urine being passed through a fistula, the scar was excised and a graft placed in position much as in the other case. Instead of a tampon, however, a catheter was introduced and left in position for some days. The result was perfect, and contraction is not to be feared, as the new canal is somewhat larger than the old.

At the session of May 24th, WALDSTEIN showed a case of *cleft pelvis with epispadias and ectopia vesicae* in a woman aged thirty-three, the peculiar feature being that the bladder was completely closed. This combination has been reported only three times, namely, in boys aged respectively fifteen months, eighteen months, and six years. In the case presented, the labia majora and minora were separated anteriorly about a finger's breadth, the clitoris was divided, and immediately under it there was an opening about one-half an inch in length, through which a sound passed in one direction into the bladder and in the other through a normally placed meatus urinarius into the vestibule. The patient was seven-months' pregnant. Waldstein believed that a normal birth for both mother and child is possible.

SOCIETY PROCEEDINGS.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting, Held May 19, 1897.

The President, DR. CHARLES L. DANA, in the Chair.

DR. JOHN F. ERDMANN presented a patient from whom he had removed the left half of the inferior maxilla for carcinoma. The man was a longshoreman, fifty-five years of age, whose family history was good. He was first seen February 15, 1897, at which time there was a hard lump on the inferior maxilla and also ankylosis of the jaw. The growth was hard, ulcerated, discharging freely, and involved the tonsil, pillar of the left fauces, sulcus of the mouth, and the left side of the tongue. There also was some enlargement of the cervical glands

on the same side. On February 22nd the speaker removed the glands, and it was found necessary to excise four and a half inches of the internal jugular vein and also half an inch of the pneumogastric nerve. The external carotid, external lingual, superior thyroid, and facial arteries were ligated. The wound healed by first intention. There was a slight brassiness of the voice, which, however, disappeared at the end of ten days. Three weeks after the first operation, the left half of the inferior maxilla, together with the tonsil, pillar of the fauces, half an inch (in depth) of the wall of the pharynx, mucous membrane on the posterior half of the left cheek, and the side of the tongue were removed through Kocher's incision. The patient made a good recovery, and there is no evidence of paralysis of the vocal cords as a result of excising the pneumogastric nerve, nor has it had any effect upon the pulse-rate.

DISCUSSION.

DR. E. S. PECK thought it remarkable that a man as old as the patient should have survived such a number of ligations.

DR. JOSEPH COLLINS said that exsection of the pneumogastric must naturally strike those of us who studied physiology ten years or more ago as being very remarkable. Then it was taught, and is now by many, that such injury must necessarily be attended with decided perversion in rhythm and rate of the pulse and changes in blood pressure. Jendrassik has recently stated that the pneumogastric is not a cerebrospinal nerve, but that its function is purely vegetative. Having this in mind, he would look for some trophic change in Dr. Erdmann's patient, and asked the latter if careful examination had been made for any change in the pupils and circulation on that side. Although not willing to go as far as this, the speaker thought it more than likely that all the fibers furnished by the so-called vagus nucleus, the vago-glossopharyngeal nucleus, are vegetative.

The PRESIDENT said that symptoms often occur in surgical practice which might be confounded with neuritis of the pneumogastric. He had seen several cases in which the latter followed grippe and in which there was paralysis of one of the vocal cords, but no change in the heart's action. The speaker did not agree with Jendrassik that the pneumogastric is a purely sensory nerve, for there are motor as well as sensory fibers in its trunk.

DR. ERDMANN, in closing, said that no study had been made of the trophic changes, because the patient disappeared and was lost sight of for a time. He added that Roswell Park has mentioned a number of cases in which the pneumogastric has been divided, on both sides in some instances, without serious results.

DR. S. BARUCH then read a paper, entitled

THE HEALTH RESORTS OF EUROPE. (See page 33.)

DISCUSSION.

DR. ROBERT MILBANK regretted that he had not heard all of the paper, which was most interesting, and thought we should have in this country sanatoria similar

to those in Europe, as described by the author. Results obtained here would then be as good as those secured abroad.

DR. WILLIAM STEVENS said that rest, diet, and hydrotherapy are beneficial in many cases and wonderfully effective in lung diseases, and hoped that the author could tell us of similar places in this country where patients might be sent.

DR. H. L. TAYLOR thought the observations made by the author while abroad should have a great deal of influence in the conduct of sanatoria in this country. He referred to several in this State, and said that the average large sanatorium is conducted as a commercial enterprise, unscientifically, and prevaded by an atmosphere of sentimentality which is absolutely detrimental to many of the patients.

DR. J. H. FRUITNIGHT was especially impressed by the fact that open air is largely relied upon in sanatoria devoted to phthisical patients. He was heartily in favor of such treatment.

DR. ROBERT NEWMAN said that such a beautiful narrative as the author's paper could hardly be discussed. He regretted that there are in this country no proper sanatoria for the treatment of consumptives, and said that in some it is remarkable to see how the simplest sanitary rules are neglected.

DR. R. A. MURRAY thought that failure with the use of natural means of cure, *i.e.*, air, water, and rest, is due to lack of facilities and personal supervision on the part of the physician. That a great deal of good is to be obtained by these agents is evident from the results secured in Germany, where the treatment is scientifically carried out under the direction of competent physicians.

DR. J. BLAKE WHITE expressed the opinion that too little attention is paid to the selection of a proper resort. A patient suffering from lung disease is sent to a certain place, simply because there is a sanatorium there and without considering whether or not it is suitable for the particular case. Many phthisical patients cannot stand the cold winters of the Adirondacks, yet it is common practice to send them there.

DR. PECK considered the paper very instructive, inasmuch as it called attention to many health resorts in Europe the existence of which is not generally known. He is heartily in favor of institutions where treatment can be carried out under medical supervision and amid pleasant surroundings, and is glad to know that in Germany especial attention is paid to old chronic cases of rheumatism, syphilis, etc. American physicians, the younger men particularly, are apt to be impatient and will not wait for the beneficial results which follow this mode of treatment.

DR. S. H. DESSAU thought there could be but one opinion in regard to the value of the paper, and said that thanks are due the author for bringing home to us such a detailed report of his observations abroad.

DR. BARUCH, in closing, said his idea in presenting the paper was to emphasize the importance of methodical and systematic treatment of chronic disease—a point which medical men are apt to neglect—and hoped it

would prove an incentive to some members of the profession to establish sanatoria in this country where such treatment could be carried out.

DR. JOHN F. ERDMANN presented a specimen of jejunum removed from a man who was shot a few days before. The bullet entered at a point within half an inch of the raphe between the two buttocks and about two inches from the coccyx, passed through the great sacro-sciatic notch, traveled along the posterior wall of the pelvis postperitoneally, punctured the peritoneum at the brim of the pelvis just outside of the ureter and iliac vessels, and was found lying beneath the superficial fascia at a point half an inch above the umbilicus and an inch and a half to the right of it. Celiotomy was done and twenty-five inches of intestine in which there were fifteen perforations were removed, and the gut united by a Murphy button. A Meckels diverticulum about an inch in length was found in the portion of intestine removed. The man was in a stooping position, crouching behind a wagon, when he was shot, and this accounts for the wound of entry. When first seen he had a temperature of 106.8° F. and was profoundly septic. During the operation five pints of salin solution were injected in the right median basilic vein. A tampon was left in the abdomen near the Murphy button, and another at the brim of the pelvis. Very free drainage took place, and the dressings had a strong odor of urine. The man died of acute septicemia on the third day. At the autopsy no evidence of injury to the ureter was found.

DR. ERDMANN also showed an inferior maxilla removed from a woman forty-three years of age, whose family history was negative. Some time ago the woman had a molar tooth on the right side extracted and the socket never healed. She then had a wisdom tooth extracted, after which a tumor began to develop. At first there was no pain accompanying the growth, but later she suffered pain at night and occasionally during the day. Examination showed a hard humor about the size of an egg, which extended under the maxilla and proved to be an osteosarcoma. The wound healed by primary intention and hardly any scar remained. There was but little deformity as a result of the operation.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, June 1, 1897.

The President, B. SACHS, M.D., in the Chair.

A CASE OF INTRASPINAL TUMOR OF THE CERVICAL REGION, MISTAKEN FOR HYPERTROPHIC CERVICAL PACHYMEINGITIS.

DR. JOSEPH COLLINS read a paper with this title. (See page 48.)

DR. F. PETERSON asked if there were any other sympathetic symptoms besides the diarrhea.

DR. COLLINS said that he had not seen the patient until a few hours before death, and at that time such sympathetic symptoms as were present were looked upon as ante-mortem ones.

DR. GEORGE W. JACOBY did not think there was a sufficient basis for a diagnosis of hypertrophic cervical

pachymeningitis unless there were present the symptoms considered characteristic of that disease. The case just reported presented a pure symptomatology of a growth.

DR. L. STIEGLITZ said that in the differential diagnosis of a tumor of the cord and pachymeningitis cervicalis, the asymmetrical character of the symptoms should be taken into account—the pain and paralysis existing in one arm only for some time. He could not agree with Dr. Collins that symptoms of tumor of the spinal cord are almost entirely root symptoms, for the exaggerated knee-jerk is an early symptom.

THE PRESIDENT said with regard to the symptomatology that the root symptoms are generally the earliest ones, but other symptoms, such as the exaggeration of the reflexes, will appear relatively early if the tumor is sufficiently large to produce pressure upon the lateral columns. The curious thing about tumors of the spinal cord is that the unilateral character of the symptoms disappears at a very early period, and does not necessarily denote any actual invasion of the spinal cord substance; they are due simply to the effect of pressure. He had been interested in the sympathetic symptoms. It had been quite generally supposed at one time that the secretion of the kidneys is very much influenced by disease in the cervical portion of the cord, but experiments made years ago by several investigators, including himself, had cast some doubt on the correctness of this view. Eckhardt has found that interference with the ureters in the earlier experiments was apparently responsible for the inhibition of the renal secretion, and that the cord had nothing to do with it. The speaker said that pachymeningitis hypertrophica cervicalis has always been more or less of an enigma to him; he has seen very few cases corresponding to the description given by Charcot, and was in some doubt as to whether it represents a disease *sui generis*.

DR. MARY PUTNAM JACOBI suggested that as a chronic pyelitis had been found in Dr. Collins' case, it was possible that a parenchymatous nephritis had been grafted upon it, and that the diarrhea was simply a uremic symptom.

DR. COLLINS said that the point made by Dr. Stieglitz was extremely well taken. Spinal cord symptoms do not appear in pia tumors until toward the end, or when the tumor is of considerable size. Small tumors rarely make pressure on the cord itself, because the pia is not bound down by diverticula, and hence, has room to expand; but, as Dr. Stieglitz had very well said, in large and rapidly growing tumors, and, of course, in tumors of the medulla itself, the reflex symptoms are very early and significant. He had been led to believe from some recent investigations on the sympathetic nervous system, that the diarrhea was a sympathetic symptom. He believed that the sympathetic symptoms present in this case, of which diarrhea was one, and the urinary complication probably another, were due to a secondary degeneration or myelitic process set up after the disease had become well developed, and to implication of the medullary substance of the cord from the pressure of the tumor.

KATATONIA.

DR. FREDERICK PETERSON read a paper founded on

four cases of katatonia that he had personally observed at the Hudson River State Hospital at Poughkeepsie. Katatonia, he said, is a term applied to a certain group of psychical and motor symptoms which have often been considered as constituting a new and distinct form of insanity. He quoted the opinions of a number of authorities showing that katatonia has been looked upon as a clinical entity, as a variety of melancholia, as a form of circular insanity, as a species of hysteric insanity and, by one author, as atonic mania. The symptoms are essentially variable, and exhibit a tendency to change from phase to phase, often returning to a previous one. The earliest symptoms are: Abnormal sensations in the head, vertigo, insomnia, irritability, and a certain amount of gradually increasing melancholia. The second stage may be ushered in by convulsions, or the patient may become maniacal. Muscular tension and spasmodic movements are present. Rhythmical movements are often seen, but are always under the control of the will. Sometimes there is a condition of religious excitement; sometimes a tendency toward talking and acting theatrically, with perhaps a tendency to rhyming will be observed. Catalepsy is often extreme, and the muscles are generally in a state of tension. It is an extremely rare condition, he thought, presenting a symptom complex observed in many cases of insanity. The katatonic state can be distinguished from the insanity of pubescence by the fact that the delusions of the former are intellectual, depressed, and varied indefinitely, while in the latter, there are vague and stupid delusions. The chief diagnostic difficulty lies in differentiation from such cases of melancholia as manifest atonic or cataleptic states, but the rhythmic movements and tendency to repeat words and strike attitudes are important differential points. It is to be differentiated from hystero-epilepsy by the history rather than by isolated symptoms. From chorea it is distinguished by the fact that in chorea the movements are irregular and involuntary, and are not apt to exhibit such a variety of phases.

DR. PETERSON reported four cases—the only ones met with in a considerable experience extending over fifteen years. The following case was typical of them all: B. R., female, thirty-one years of age, married, possessed of a common education. She was admitted to the Hudson River State Hospital during February, 1884. There was no hereditary history. The first evidence of mental disturbance manifested itself in August, 1883, two months after the birth of one of her children. She developed complete anorexia, lost interest in her surroundings, and, three weeks before admission, became suicidal. Menstruation was regular. The case was at first regarded as one of puerperal melancholia. On February 11 she tried to beat herself against the bedstead, and claimed that she was being poisoned. She passed quickly into a condition of noisy excitement, and refused all food. She was markedly suicidal. She showed symptoms of exhaustion, and was fed by a tube for a considerable period. On March 15th she became cataleptic, and was absolutely silent, noticing no one, not even her husband. She began to wet and soil the bed. After a month or more she began to destroy her clothing and become filthy in

her habits. In November, 1884, she began to cry out repeatedly, "Bring me to my children in New York," and this was repeated over and over again in a rhythmic manner, and more markedly on alternate days. After awhile she began to rhyme with a series of unintelligible words. Meanwhile she was improving in her general condition. In the autumn of 1886, improvement was very evident, and after a short time she was allowed to go home. A recent report shows that she has recovered completely and permanently. Each one of the other three cases began as a case of melancholia, in which cataleptic conditions developed, and then this phase of verbigeration with rhythmical movements was added. One very prominent feature of all four cases was the melancholia. The verbigeration and rhythmic gesticulations were, perhaps, the most characteristic features.

His conclusions were: (1) That katatonia is not a distinct form of insanity; (2) that it has no true psychical character in its manifestations, and, hence, cannot be classed as a form of circular insanity; (3) it is simply a type of melancholia, and it is not desirable, therefore, to retain the name "katatonia." Katatonic melancholia would be a convenient descriptive term. He was of the opinion that the prognosis in melancholia with katatonic symptoms is more grave than in any other form. The treatment is the same as for melancholia.

DR. WILLIAM HIRSCH said that he had studied these cases while an assistant of Kahlbaum, who had originally described the disease. Katatonia is only one of a number of peculiar forms of insanity that Kahlbaum has created. The speaker said that he had very carefully studied the records of the cases which Kahlbaum had himself diagnosed as katatonia, but he could never convince himself that katatonia was a distinct clinical entity. In none of these cases could there be found a single symptom which was not sometimes present in other forms of insanity. Kahlbaum claimed that katatonia gives a very favorable prognosis, yet a celebrated pupil of his had recently published the statement that the prognosis is very bad. In 1874, Kahlbaum had asserted that katatonia is an organic disease, and had published certain pathologic descriptions in support of this position. This seemed to be directly opposed to his estimate of the prognosis, and he believed that Kahlbaum has since abandoned these views.

DR. WILLIAM LESZYNSKY asked Dr. Peterson if those cases which show cataleptic symptoms also exhibited symptoms of trance at the same time.

DR. PETERSON replied that they had not done so any more than the ordinary cataleptic.

DR. LESZYNSKY recalled a case in his practice in which the patient had become cataleptic, and had remained in a trance state for three months. A certain surgeon had removed both ovaries from this patient, with the idea of curing her. A curious feature was that she became conscious some time before death, and told him in the presence of others that she had been perfectly conscious of what had taken place during the previous few months, and proved her statement by recalling certain incidents.

DR. HALLOCK said that he had seen two cases of katatonia. One of these had passed into dementia; the other had been considered at one time to be a case of melancholia, but the later symptoms had been of a hysterical order. The katatonic symptoms had finally passed off, and the patient had made a good recovery.

DR. RAFEL remarked that there must necessarily be great confusion if, as Kahlbaum had stated, any one of the phases might fail.

DR. PETERSON, in closing the discussion, said that most of those who have followed Kahlbaum have looked upon the prognosis as very grave, some authorities having placed the recoveries at three per cent. Of the four cases reported in the paper, one patient recovered. In the fatal cases, the patients passed into a condition of dementia, and generally died of tuberculosis, which is also consistent with the idea that katatonia is a variety of melancholia, as this is a common termination in melancholia.

REVIEWS.

ANATOMY. DESCRIPTIVE AND SURGICAL. By HENRY GRAY, F. R. S., Lecturer on Anatomy at St. George's Hospital, London. New and thoroughly revised American edition, much enlarged in text, and in engravings both colored and black. In one imperial octavo volume of 1239 pages, with 772 large and elaborate engravings on wood. Lea Brothers & Co., publishers, Philadelphia and New York, 1896.

A DICTIONARY is the great balance-wheel of the language of a people. It establishes the lines along which the development of a language may advance, and, at the same time, it holds in restraint a too rapid progress in directions which tend to deteriorate rather than to improve. In the authority of its utterances and in the respect in which it has been held by generations of medical students and practitioners, Gray's "Anatomy" bears about the same relation to anatomic literature which the general lexicon bears to a nation's language. The emotions that its presence recalls are most conflicting. There are times in every medical student's life when he feels as he takes it from the shelf that no wildcat that he may be called upon to master could possess more venomous teeth and claws than are contained within the covers of this venerable book. At other times the lucidity of its descriptions and the accuracy of its illustrations afford the keenest delight. From these conflicting emotions a love and veneration are begotten which endure through a professional career. It is, therefore, with no slight degree of gratification that this new edition is welcomed from the press of Lea Brothers & Company. Not only has there been a general revision of the work as a whole, but in certain departments in which investigation has been especially active during recent years radical changes have been introduced. The sections which have been rewritten are those on the brain, the teeth, and the abdominal viscera. The chapters on histology and development, a feature peculiar to Gray, and one of inestimable value in affording a key to what

would otherwise prove anatomic mysteries, have also been revised in accordance with the latest discoveries in this field of work. "Gray" has always been distinguished by a series of splendid illustrations. These have been enriched in this new edition by no less than one hundred and thirty-five additional engravings. In these, distinctive colors have been used to give greater prominence to the veins, arteries, and nerves, as well as to the attachments of muscles. In mechanical execution no effort has been spared to render this work worthy of the continued reputation won by "Gray" in the past as the foremost of medical text-books. This new American edition is destined to maintain in every respect the exalted position which for many years the work has enjoyed.

A TEXT-BOOK OF BACTERIOLOGY, INCLUDING THE ETIOLOGY AND PREVENTION OF INFECTIVE DISEASES, and a Short Account of Yeasts and Moulds, Hæmatozoa, and Psorospers. By EDGAR M. CROOKSHANK, M.B., Professor of Comparative Pathology and Bacteriology, and Fellow of King's College, London. Fourth Edition. Philadelphia: W. B. Saunders, 1896.

ALTHOUGH this well-known work is now in its fourth edition and has been increased by the addition of twenty-six new chapters, still it does not embrace all the recent advances made in the department of bacteriology. After a rather careful reading of the book we have been impressed by the fact that the author is far more profoundly informed in animal, than human, bacteriology. For instance, the chapter on malarial fever covers four pages, while fifteen pages are devoted to hæmatozoa in horses, fishes, rats, and frogs, and seventeen pages to an outbreak of cow-pox in Wiltshire, with the author's investigations to disprove the Local Government Board's idea that scarlet fever has its origin in cows. When one considers that more than thirty pages are given to actinomycosis and but one page to gonorrhœa, it will be noted that the work is not as evenly balanced as it might be.

The methods of staining bacteria should have been more minutely described, also the preparation of sections. If a student has no knowledge of histological methods in general, this work hardly explains the details clearly enough for his needs, and therefore as a text-book on bacteriology it cannot be compared with some of the recent books with which we are familiar.

A chapter on photography has been added and the methods are clearly but briefly outlined. A chapter on the classification of species for diagnosis, modeled after Eisenberg, and a short account of each organism arranged for easy reference, increase the value of the book. Space does not admit of our reviewing this work as fully as we should like, but we can heartily commend it as a work of reference to the advanced student, particularly to those interested in diseases of the lower animals. The chapter on actinomycosis, for example, is the best that we have seen in any text-book. The text is remarkably free from typographical errors, the type and paper are excellent and the illustrations are profuse and for the most part superb.

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ORIGINAL ARTICLES.

SERUM-THERAPY IN ACUTE SURGICAL INFECTIOUS DISEASES.*

By HOWARD LILIENTHAL, M.D.,
OF NEW YORK;
ASSISTANT SURGEON TO MT. SINAI HOSPITAL.

TWENTY-SIX years ago, Sir James Paget devoted several pages of the *Lancet*¹ to a paper on dissection poisons. The thoughts there so vividly and elegantly expressed were suggested by the distinguished author's recent personal experiences with septicemia, which he incurred while examining *post-mortem* the body of a man who died of acute sepsis following lithotomy. The observations and speculations of Paget are most interesting when we think that they were made before the germ theory of disease had been accepted and before anything was really understood of the true pathology of wound-infection. Paget observes that "not all men can be made ill by a virus from a dead body, nor can the same man be made ill at all times; but there must be what is called a fitting soil for the virus to work in. We know no more what this soil is than we know what the virus is." And again, further on, he observes that "a chief interest in reference to these various susceptibilities to the influence of the virus from dead bodies is, that *one may become insusceptible* [*italics mine*]. They who are day after day engaged in *post-mortem* examinations usually acquire a complete immunity from the worse influences of the virus. . . . They do not suffer with any infection of the lymph or blood."

This was written in 1871, and twenty years and more elapsed before the first attempts at artificial immunization were made. Yet now that the ice has been broken, the activity in this field of research has become enormous. The amount of literature during the last eighteen months on the cure and prevention of infection by the use of substances prepared by Nature herself in mammalian bodies is truly astonishing. I shall not here take time to describe the progress in this new and fascinating study; it was excellently done by Roger and Haushalter but a few months ago.²

Experimental work in the serotherapy of acute surgical infections has its object in combating the various pathogenic organisms—for example, the colon

bacillus by Drs. Albaran and Mosny,³ bacillus pyocyaneus, the bacillus of glanders, anthrax, and the staphylococcus by Kose and others,⁴ the bacillus of tetanus by Behring, Kitasato, Tizzoni, and others,⁵ and the streptococcus by Marmorek and many others. The actual value of the serum treatment of disease caused by these micro-organisms in the human subject is not yet determined, though in the laboratory animals are immunized, cured, or killed with a pretty fair amount of precision.

Tetanus.—Hewlett⁶ quotes Sir Astley Cooper to the effect that a patient with tetanus may recover spontaneously, but he believes that the antitoxin should be used in all cases, and very early. A case reported by J. W. Cokenower of Des Moines⁷ but a few weeks ago is of great interest. A man infected about six days before had seventy-five convulsions per hour. After antitoxin had been given, the spasms were reduced to ten in an hour, and there was marked general improvement. Unfortunately, the supply of antitoxin gave out, there was a return of the evil symptoms, and the man died.

Dr. Trapp⁸ of Helferich's Clinic in Greifswald, reports a most malignant case of tetanus with opisthotonos and severe and lasting trismus cured after injections of Tizzoni's antitoxin. Trapp's impression of the antitoxin treatment is very favorable because of the rapid improvement noted. He recognizes the fact that the man might have recovered without antitoxin, but cannot help believing in its efficacy.

Tetanus, fortunately, is not a common disease, and its percentage of mortality varies so widely according to different observers that an accurate estimation of the value of serotherapy in its treatment may hardly be expected in the near future. It is probable, however, that the antitoxin, if it is to be of real benefit, should be employed as a prophylactic, especially in cases in which suspicious wounds occur during the progress of an epidemic of tetanus. If we wait until the characteristic symptoms of the disease are present, we wait for the occurrence of general infection and lose valuable time.

Pyogenic Infection.—The investigations in serotherapy as applied to the colon bacillus, anthrax, staphylococci, etc., are as yet not sufficiently tested to warrant more than their mention here. I shall therefore discuss only the work which has been done to counteract the evil effects of the streptococcus.

* Read before the Surgical Section of the American Medical Association, Philadelphia, June 3, 1897.

Marmorek,⁹ in 1895, produced a serum by successive inoculations of the horse with increasingly virulent cultures of the germs. This or similar serum has since been produced by numerous others, and a considerable number of cases have been recorded by various clinical experimenters in which this remedy has been used. It has been tried in the various forms of surgical infection, whether the source of the trouble was found to be due to the streptococcus or not, as, for example, in erysipelas,¹⁰ in puerperal fever,¹¹ in septic peritonitis, and in other general acute septic infections.

Chantemesse,¹⁰ in erysipelas, reports a marked diminution of the death-rate in those patients treated by the stronger serums, and has never noted ill effects. Delirium and the pulse were usually improved after the injections. Bolognesi¹² criticized Chantemesse, saying that it would be necessary to note the *type* of erysipelas (malignant or not) treated by the serum. It seems to me, however, that inasmuch as one would hardly accuse an investigator of picking out the milder cases for serotherapy, the difference in the death-rate with and without serum treatment in several hundred cases is worth noting and this even in view of the fact that Koch and Petruschky¹³ have not observed *immunity* from erysipelas after previous attacks or after inoculations with antistreptococcic serum. Merieux and Niemann¹⁴ say, however, that Petruschky used the wrong kind of serum in his experiments, and they maintain that good results in immunizing animals may be obtained by using another preparation. Aronson¹⁵ believes that the carbolic acid used ($\frac{1}{2}$ per cent.) to preserve Marmorek's serum gradually destroys the "antibodies" or substances which form the active principles of the serum, and that if a pure serum unmixed with carbolic acid be used it will immunize.

It would not be right for me to take up more of your time by proceeding further in this line. It is enough to say that investigators differ widely in their reports, and that experiments with serum-therapy in treating the human subject, whether for erysipelas or general infections of other kinds, vary so greatly in their results that we must be slow to form an unprejudiced opinion. In the meantime, all new cases should be recorded so that at some time in the future the evidence on which to base mature judgment may not be wanting. It must also be remembered that, after all, the streptococcus itself is not well understood. I need but say that Nocard¹⁶ has shown that of two equally malignant cultures, the one injected into a horse may be counteracted by Marmorek's serum, while the other is absolutely uninfluenced by it, to give you an idea of the great difficulty of forming a scientific opinion.

I shall, then, simply add my mite to the knowledge we have on this subject by recording here some clinical experiences with serum treatment in acute surgical infections, and I believe that, after all, the history of a personal success or failure is of practical value in influencing the line of treatment of others who may be confronted by similarly grave problems. Most of the cases here reported have not been published, but one or two which have been referred to or presented at the meetings of medical societies are sufficiently striking to be again brought forward.

CASE I.—This history, which was very lately published by Melloni of Rome,¹⁷ illustrates a class of cases in which the use of diphtheria antitoxin has been followed by cure, though no Klebs-Löffler bacilli were present. The disease was diagnosed as "hospital gangrene," and staphylococci and streptococci were found in the wound. It was a case of perineal abscess with urinary infiltration. Incision and drainage were followed by rapid and severe sloughing with the formation of "diphtheritic" membrane. There was high fever. Ten cubic centimeters of Behring's serum were given and the temperature rapidly fell. Another dose was administered followed by the rapid appearance of a demarcation line, and subsequent uneventful recovery.

CASE II.—This case occurred in the practice of Dr. R. Abrahams of New York. The patient was seen twice in consultation by Dr. Mundé. On February 15, 1897, six days after confinement by a midwife, the woman, a primipara twenty-six years old, was desperately ill. The abdomen was distended, the pulse rapid, the temperature 106° F. Involuntary urination and defecation were present, and there was a trace of albumin in the urine. A stinking, sloughy, "diphtheritic" membrane covered the raw surface of a complete laceration of the perineum, and a membrane was also seen on the palate and tonsils. There was, unfortunately, no bacteriologic examination, but the gentlemen in charge agreed that, clinically, it was not a case of true diphtheria. A single injection of No. 6, New York Board of Health diphtheria antitoxin was given, and was followed by a rise of temperature to 107° F., then by a fall of 1° per hour until the normal was reached. The patient fell into a sleep and recovery was rapid and unimpeded.

I am aware that the omission of a bacteriologic examination was unfortunate, but the case forms an interesting parallel with the first. T. J. Bokenham,¹⁸ in a discussion in England two years ago, noted that diphtheria antitoxin seems to act against streptococcic infection.

CASE III. is one of my own. It illustrates the use of antistreptococcic serum as a prophylactic. This use of the serum in cases where infection is to be expected had already presented itself to my mind when I read a report by W. Watson Cheyne,¹⁹ who says that in three cases of extensive operation about the mouth and throat previously treated with serum

there was a remarkably clean appearance during the healing of the wounded surfaces, with entire absence of the usual superficial sloughing. The breath, too, was remarkably free from odor. My patient was a woman about sixty-five years old, who had an epithelioma of the corner of the mouth requiring a wide extirpation. She received twelve cubic centimeters of Gibier's serum the day before operation and a like dose just before she took the anesthetic. Immediate healing was perfect, but a buried suture some days later formed a small abscess and came away. There was no constitutional disturbance at any time after the operation, even when the stitch came away.

CASE IV.—L. S., service of Dr. Gerster at Mt. Sinai Hospital. A girl of eighteen had violent general sepsis after an excision of the knee. No bacteriologic examination was made, but the general symptoms were most grave. There was stupor, rapid and weak pulse, fever, albuminuria, and icterus. A systolic murmur also appeared. She had seven injections of serum, eight to eleven cubic centimeters, and died March 6th, nineteen days after operation. The first injection of serum was not given until four days after the excision. The albuminuria *disappeared* and for a time her mind became clearer.

CASE V.—George G., aged fourteen, service of Dr. Gerster, the first patient to be treated with antistreptococcic serum at Mt. Sinai Hospital. This was on March 13, 1895. The boy had acute osteomyelitis of the femur, the tibia, and the jaw. His condition appeared hopeless, and two doses of the serum were given. Recovery followed.

CASE VI.—Bertha U., aged thirty-six, was operated upon by Dr. Van Arsdale at Mt. Sinai Hospital. She was intensely septic from an extensive gangrene of the gall-bladder, and it was thought that she would die. Collapse was so great that saline infusion was three times performed. She recovered after five injections of the serum. An improvement in the pulse was noted after the injections.

CASE VII.—Tillie M., aged twenty-one. Polyarthritides after puerperal sepsis. She was a patient of Dr. Gerster. She was not violently septic, but her condition was very wretched and she suffered intensely. She received five injections. A smart reaction followed the last one, with temperature 103° F. and pulse 140. Urine was negative throughout. Recovery.

CASE VIII.—Jacob W., aged twenty-five, patient of Dr. May at Mt. Sinai Hospital. Otitis media with possible brain abscess; acute sepsis; pleurisy. Two injections. Died.

CASE IX.—C. D. T., writer's case. Multiple bone tuberculosis; numerous operations. Four injections of Gibier's serum, six cubic centimeters each. There was no appreciable result. The patient eventually recovered.

CASE X.—R. B., aged thirty-three, was operated upon by me, May 3, 1897, for acute appendicitis. The abscess was accidentally ruptured into the peritoneal cavity. The cavity was not washed

out. She at once was given a *quasi* prophylactic injection of seven cubic centimeters of Gibier's serum. Recovery was uneventful. A culture from the abscess contents proved to be one of the colon bacillus.

CASE XI.—Boy of ten, with severe general septic peritonitis from a perforative appendicitis, had one dose of serum, but died a few hours after operation.

CASE XII.—This case is the last on my list and is, I believe, the most important. It is to my mind even more remarkable than the one reported by Ballance and Abbot²⁰ in which a physician suffering from fulminant general sepsis with hemorrhages recovered, apparently in consequence of treatment with antistreptococcic serum.

F. F., a girl eighteen years of age, and previously healthy, was attacked with severe osteomyelitis of the right femur. She had great pain, high temperature (104° F.) and rapid pulse, with slight icterus. On December 15, 1896, at Mount Sinai Hospital, just six days after the very first signs of the disease, I saw her and operated at once, exposing the marrow at the lower end of the shaft. The periosteum peeled easily from the bone, the bone cortex did not bleed, and the marrow seemed to contain too great an amount of free fat, but no pus was present. The wound was packed. After the first reaction of the operation, the temperature receded to 100.7° F. on the following day and the pain completely disappeared so that no opiate was required. The patient's mind, however, seemed a little dull and there was abdominal distension. The urine contained an excess of urates, but was of sufficient quantity. On the third day, December 17th, the maximum temperature was but 99.6° F., with pulse at 84, but more marked icterus and a distinct mental wandering. On the fourth day there was a frightfully rapid change for the worse, the patient becoming stuporous, and more icteric, with bile in the urine, *dilated pupils*, and rapid pulse. The wound was dressed. It looked "dirty," and an abscess was incised, under cocaine, just above the quadriceps bursa. The pus, examined at once by Dr. Elsberg, assistant pathologist to the Hospital, was teeming with streptococci in very long chains. This dressing was done in the morning; during the afternoon the girl's condition became still worse, the urine contained a trace of albumin, the pupils became widely dilated and did not react to light, the stupor amounted to coma, and at intervals, especially when she was touched or in any way disturbed, she emitted a peculiar loud and piercing shriek. There was distension of the abdomen and vomiting. The urine had to be drawn by catheter, and afterward came involuntarily. The temperature was still but 100° F., but the pulse was small and irregular, 140 beats to the minute, in spite of the administration of digitalis; respiration 36. Later in the afternoon things became so much worse with such astonishing rapidity that the patient was considered moribund. I had asked Dr. Gerster to see her with me, to give counsel as to the advisability of a high amputation, but by the time we saw her Dr. Gerster considered her death within a few hours to be almost certain,

and believed that any operation would probably be terminated by her death on the table.

I then turned to streptococcic antitoxic serum as a last resort, and injected $12\frac{1}{2}$ c.c. of Gibier's preparation, following this by vigorous stimulation by the rectum and under the skin. Twenty-five minutes after the antitoxic injection some flushing of the face was noted. In three hours the patient received another injection of $12\frac{1}{2}$ c.c., and one-half hour later a distinct flushing of the face again was apparent. There was twitching of the right side of the mouth, and the shrieks of the patient were incessant, though she was unconscious, could not swallow and could not be aroused. Next day—December 19th—the only apparent change was rapid emaciation. The temperature, too, began to rise. The urine contained hyalogramular casts. Two more injections were given. On December 20th the pulse-rate rose to 164 and was very feeble, and the temperature to 104° F. A loud pericardial murmur appeared, heard best at the base. Two more doses of serum were given.

For two days more the case went on in much the same fashion, the patient shrieking most of the time so that she disturbed the whole hospital, and breathing so frequently that the respirations could not be counted. Not until the evening of the 22d, five days from the onset of the severer symptoms, did she show the slightest real improvement. She then swallowed an ounce and a half of milk. On the following day, however, December 23d, after a short relapse, there was a distinct and rapid change for the better. Consciousness returned, there were two copious evacuations of the bowels without artificial aid, and nourishment was taken. The wounds now began to discharge and clean up. On December 24th a "diphtheritic" membrane appeared on the left side of the palate and uvula, other patches appearing on the buccal mucous membrane and on the lips. Cultures taken showed staphylococci and streptococci, but no Klebs-Löffler bacilli. Under local treatment the membrane was thrown off, leaving punched-out granulating areas which cicatrized. The pericardial murmur gradually vanished, and from this time recovery was rapid and unhindered.

It may be of interest to know that the father of my patient died a few years ago of septicemia following a glossitis caused by cutting his tongue in licking the flap of an envelope. She has a brother who lately has recovered from a malignant erysipelas starting in the nose.

In speaking of the apparent constitutional action of the serum, I would say that no distinct sign of improvement followed immediately upon any one injection, but for four days the patient's death was momentarily expected, so that I felt satisfied with the mere fact of her remaining alive. About 100 cubic centimeters of the serum in all were given. The blood was examined during the course of the disease by Dr. Mandlebaum, pathologist to the hospital, who reported no culture.

I beg you to note that I do not assert that this young girl was saved from certain death by the serum. I admit that she may even have recovered in spite of it; still, no man who saw her at her worst can help feeling that if he had to deal with a similar emergency the patient should have a chance for life with the serum rather than without it.

Recently I operated again on this same patient because of a sinus which developed at the site of the old scar with pain and fever. The serum was given a number of days before operation, with the result that her temperature fell from a daily maximum of about 100° F. to normal. Just before operation, $12\frac{1}{2}$ cubic centimeters were injected and the old scar widely opened. The discharge from the wound taken on the operating-table yielded a culture of staphylococci, but *no streptococci*. I removed a small sequestrum, and apparently having made a perfectly clean wound by the excision of the entire old tract and its cicatrix, I made an attempt to treat the wound by the Schede method of so-called organization of moist blood-clot. The experiment proved a failure, phlegmonous inflammation necessitating the removal of the sutures and the packing of the wound. It is interesting to note that now the discharge yielded a pure culture of streptococci. There were violent constitutional symptoms, with pulse-rate of 160, and temperatures to 104° F., but with absolutely no sign of cerebral disturbance. Convalescence was rapidly established. The local application of anti-streptococcic serum was once employed, and the wound surfaces certainly looked better the next day, but because of the ramifications of the wound tract this was discontinued since the experiment could not be satisfactorily carried out. It is my intention to try some other experiments with the local applications of the remedy.

Concluding, now, I will try to sum up the matter of serum-therapy in suppurative disease. To begin with, I believe that there is such a thing as immunity more or less complete from certain forms of suppuration. In Gould's "Year Book,"²¹ under "General Surgery," I find an editorial note as follows: "On the face of it, it seems improbable that there is any such thing as immunity, natural or acquired, to pyogenic infection. So far as immunity to *all* kinds of pus-producing infection goes, there may be some truth in this statement, but when one remembers that in laboratories where antistreptococcic serum is made animals are unquestionably rendered immune to certain kinds of the most virulent pus-producing organisms, one is obliged to acknowledge that there is such a thing as immunity, and that in the future we may hope for an increasingly great degree of certainty in the use of immunizing agents in surgery. I believe.

that the time is near when it will be common practice to make the attempt at immunization so far as possible immediately *before* surgical operations are undertaken, the period of immunity probably being very short."

As to the cure of cases in which sepsis already exists, it must be remembered that remarkable and unexpected recoveries are continually occurring, and that these recoveries are more apt to be published when they follow the administration of some new and fashionable drug or the application of some strange or sensational method. It is also, I fear, a fact that reports of many unsuccessful cases which might be very suggestive never see the light. We shall be obliged to wait until the mass of testimony is very great, perhaps even until the thing has been overdone and the pendulum begins to swing backward, before a true value can be placed upon serum-therapy in surgery. In the meantime, it is my opinion that the remedy is well worth trying, though never to the exclusion of what I may call legitimate surgical measures.

In no case which came under my observation have I noted any ill effect which could be ascribed to antistreptococcic serum, except, perhaps, an occasional smart urticaria. Indeed, in two of the cases here reported albuminuria disappeared, though this is one of the symptoms said to be caused by serum injections. It is well known, however, that evil has followed the use of antitoxin and of serum. Roger says that if filtered fluid is used the chance of accident is very slight. It seems that certain horses produce serum, the use of which may be followed by joint pains and swellings, adenopathy, enlargement of the spleen, purpura, anemia, nephritis, and other unfortunate sequelæ. It also seems as if death had in some instances been caused by the serum. The untoward effects are usually reported as having followed the injection of diphtheria antitoxin, but this observation may be due to the fact that the total number of cases treated for diphtheria is vastly larger than the number of cases treated for other septic disease. We must also distinguish, if possible, between the effect of the sepsis and that of the remedy. Yet, even if it be conceded that certain ill effects may occur, it means only that if serum-therapy is worth wider application the product must be further improved and its effects better understood.

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THE DESTINY OF VAGINAL HYSTERECTOMY FOR MALIGNANT DISEASES.¹

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SO FAR as this occasion is concerned, it matters not whether we accept Cohnheim's theory that "the only cells capable of originating neoplasms are those sequestered during embryonic life," or, with Williams, believe that "neoplasms are of intrinsic origin, due to a modification of the formative process by abnormal forces generated within the body, rather than extrinsic, due to inflammation or the intrusion of micro-organisms," or favor the more recent idea of the bacterial origin of all malignant growths. The fact confronts us that of all organs none is more prone to take on malignant degenerative processes than the uterus. Exposed as it is to so much irritation and injury incident to menstruation and mishaps in early girlhood, and those disturbing causes of mature womanhood—the marital relations and the traumatism resulting from childbirth, with constant irritating discharges setting up perverted cell action, it is not surprising that this nesting organ of all mankind should so often be the point of election for malignant degeneration.

The achievements of pelvic surgery by the vaginal route, with its immediate low mortality, has stimulated surgeons to extirpate the uterus for divers conditions, without, I fear, a just regard to ultimate results. Certainly in non-malignant conditions the removal by the vaginal route promises much in the way of completeness and lessened shock, for "benign tumors remain local, but the malignant types penetrate into the neighboring tissues and destroy them, and the tumor germs, being carried off in the blood and lymph, give rise to metastatic or secondary neoplasms in all parts of the system. Metastases have essentially the same structure as the primary tumors, and are found either in the vicinity

¹ Abstract of a paper read before the Section on Gynecology and Obstetrics at the Forty-eighth annual meeting of the American Medical Association, Philadelphia, June 2d, 1897.

of the latter, that is, in the region supplied by the lymph and blood which comes directly from the tumor, or in distant organs, after the tumor germs have passed through the heart. It is characteristic of tumor metastases, especially those from really malignant tumors, to go on growing indefinitely. Normal tissue germs do not have this peculiarity." (Tillman.)

Senn says: "Glandular carcinoma is followed at an early stage by regional infection. The lymphatic glands nearest the organ affected in the direction of the lymph current are usually involved first, when step by step, successive glands are implicated, until the entire chain of glands has become infected. Secondary tumors are subject to the same degenerative changes as the primary. The glandular tissue is completely removed in the lymphatic glands by the substitution of tumor tissue." He further speaks of "a wide zone of infiltration," and says that Virchow pointed this out several years ago, and that Waldeyer described it as an inflammatory zone, because he found in the connective tissue numerous small cells. "Infiltration tissue consists of leucocytes and young epithelial cells, which, like the leucocytes, wander by virtue of their ameboid movements into and along the connective-tissue spaces. Carcinoma of the alveolar type may develop within the cervical canal, and destroy the neck of the uterus before it is discovered, or in cancer of the body of the uterus, the cervix may become constricted, causing retention of the secretions (hydrometra), or the body of the uterus may be well nigh destroyed before the cervix is attacked." Lymphatic infection is found in the lumbar, retroperitoneal and inguinal glands. "Occasionally there may be found an isolated nodule of cancer higher up than the apparent edge of the disease. Whether this is due to lymphatic infection or to multiple cancer formation is an undecided question." (Warren.)

"Examination of the retroperitoneal lymphatic glands in suspected carcinoma of the uterus should never be neglected. In the great majority of cases the surgeon has to deal with carcinoma after regional infection has set in, and when the disease has advanced too far for a successful radical operation." (Senn.)

The last quoted authority also says: "The greatest progress in the treatment of carcinoma will have been made when we are placed in possession of an *infallible* means of early diagnosis." This was said in connection with carcinoma in general. Difficulties multiply when we consider carcinoma of the uterus, and there are no means of overcoming the obstacles presented. The hidden location of the

organ, the secretive and natural disinclination of women to communicate even to their nearest friends any suspicion entertained that all is not well are barriers which will require the education of many generations to remove. The average woman is so ignorant of her own organism that she is incapable of differentiating between the normal and the abnormal. She begins early in her womanhood to expect the "the change of life." Allured by the dangerous and false teachings of the mother who tells her that irregular flow is not uncommon, and that she must not be alarmed at this, or even at an offensive discharge, she keeps her secret, in blissful ignorance of the progressive degeneration which has overtaken her. When at last forced by failing strength and pallid cheek to consult her physician, the discovery is made that the diseased process has destroyed the cervix, that the lymphatic pelvic glands have become infected and that the broad ligaments and peri-uterine tissues have been invaded, and little hope of relief remains, either by palliative or radical measures.

Despite statistics (which too often are deceptive) showing many apparently permanent cures, on high authority we are forced to the conclusion that most cases of uterine cancer presented are inoperable, at least, by the vaginal route. With these discouraging conditions confronting us, and bearing in mind the limited field of operation, the accepted infectiousness of cancer tissue, and the possibility of the transference of living tumor cells during an operation, coupled with the impossibility of removing in many cases *all* of the diseased structure, we are forced to admit that the removal of the uterus per vaginam for malignant disease is, in the majority of cases, a doubtful expedient. Complete cures are rare, even when the carcinomata are extirpated very early in their course. As a rule, one recurrence follows another until the patient succumbs to general exhaustion.

Gross long ago claimed that in cases of malignant disease of the mammary gland it was absolutely essential to remove with the gland all of the axillary fat and lymphatics. In cancer of the uterus we have, in a great degree, a parallel condition to deal with, but the narrow vagina and the danger of invading other important organs and structures precludes the possibility of completely removing by the vaginal route all probable diseased tissue. In view of the opinions of some of the leaders in medical thought, we are compelled to look further for other and better methods of procedure in dealing with malignant disease of the uterus. It is probable that any plan of complete extirpation will be found inadequate in a large percentage of cases, but that

method which permits of the greatest opportunity for inspection of the diseased uterus, adnexa, and infected glands, and furnishes an opportunity for a more complete removal of all diseased structures, both primary and secondary, must ultimately become the operation of election.

The dexterity which has characterized American surgeons in abdominal section for the total removal of the uterus and appendages, leads to the belief that in the near future vaginal hysterectomy for malignant disease will be restricted to those rare cases in which women present themselves in the inception of the disease, and before secondary infection has taken place. It is the opinion of the writer that the more radical operation known as the Clark method will supersede vaginal hysterectomy for cancer. By this abdominal method of total extirpation of the uterus and adnexa the posterior peritoneum and all glands at the bifurcation of the iliac vessels are brought into view and removed whether infected or not. We are thus enabled to go beyond the inflammatory zone and to remove diseased glands which are not within reach by the vaginal route. The bladder, the ureters, the rectum and all other important structures are brought directly into the field of vision. Thus directed, the hand of the operator does thorough work, and the poor sufferer has done for her the best that the science and the art of surgery can offer. The objection urged against this operation—that it is tedious, that too long exposure results, that prolonged anesthesia endangers the patient's life—will all be overcome by that practice which makes perfect.

A STUDY OF THE SYMPTOMATOLOGY OF THE NEURASTHENIA IN WOMEN.

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THIS subject is considered on account of its important bearing upon almost all cases of disease occurring in women, but because neurasthenia is studied in this connection I would not have it inferred that men are less liable to its manifestations. To begin with, "neurasthenia" must be considered a condition, which only in a certain proportion of cases reaches the dignity of a separate disease. It has been of special interest to me because I have approached it from two standpoints which might almost be defined as negative and positive. I have studied it as a practitioner, devoted particularly to the cultivation of internal medicine, and on the other hand, as a worker in a very large neurologic clinic where neurasthenia naturally is a luxuriant growth.

Exhaustion, anemia, and poisoning of the nervous centers have been named as the three primary causes

of neurasthenia. Bossier of Paris regards it as an attenuated melancholia. We must never lose sight of the fact that the causes of the condition in most of our cases are concealed by the patient. Altogether too few cases in our experience are traced to causes which we are confident are actively operative. It is the rarest thing indeed for a woman to acknowledge the habitual excessive use of alcohol. The same is true of other drugs, and of vicious habits. Some investigators seem to be better able than others to discover the truth in these respects, but certainly the number recorded is suspiciously low. Some of the patients take their drugs in the form of a proprietary mixture with an innocent name, and are not conscious themselves of the cause of their nervous exhaustion.

It is probable that uterine disease is a comparatively unimportant element in the causation of neurasthenia. Much more frequently neurasthenia gives rise to uterine symptoms. The error of treating such cases as primary cases of pelvic disease, has been almost too often emphasized to make it necessary to dwell upon it at the present time. In neurasthenia from some cause the nervous system seems to suffer deterioration of power as a whole rather than develop a definite local lesion. Although no lesion is discoverable by any pathologic examination so far made, it is probable that there really is a failure of nutrition of the whole nervous system.

To the neurologist, neurasthenia as a diagnosis is too often a nosological dumping-ground for everything that is not clearly something else. There are a few fairly defined types that in spite of the surprising variations in surface symptoms will retain their identity. On account of this versatility of symptoms, we must in a definite way go deeper than merely sorting subjective sensations for a basis of classification. Just as the botanist lays down a certain fundamental basis for the classification of plants, and neglects color, size, and latitude in the application of a definite system, so in the classification of neurasthenia we must base our diagnosis upon the character, surroundings, and life history of the patient, just as much as upon the particular coloring or form of the disease at the time when observed. The practical advantage of this more fundamental study is that it suggests lines of management which will correct in a degree the primary cause of the disorder.

A typical case presenting itself for treatment shows a woman between the ages of twenty-five and fifty, fairly well nourished, somewhat anemic, who complains primarily of a subjective sensation of nervousness followed by a train of symptoms that is different in every case. Fairly constant is the complaint of pain in the top of the head, sleeplessness, loss of

appetite, and subjective sensation of tremulousness, but the most characteristic of all is the neurasthenic manner—the abnormal concentration of the attention upon symptoms—and their exaggeration. The patient delights in recounting the minutest details, and yet seems, in a sense, rather to enjoy a concealed happiness or pride in her condition. Neurasthenia is essentially a debility. Its importance to the individual is very great indeed. A confirmed neurasthenic is literally unable to stand the ordinary hardships of life. Of this the patient is thoroughly conscious, and is constantly seeking some explanation in the presence of some more definite disease.

A good synonym of neurasthenia is pathologic fatigue. The parallel of physiologic fatigue with neurasthenia is very close. The neurasthenic, however, is tired in the morning and feels better toward night. Curiously enough, an early stage of neurasthenia is marked by a lack of the sense of fatigue, which has been happily termed fatigue anesthesia. The danger of this condition is easily apparent, as the patient unconsciously goes beyond the limits of physiologic fatigue.

The existence of neurasthenia as a local disease has been suggested by Huchard of Paris under the term of local neurasthenia. With the number of manifestations of neurasthenia already on hand, it is rather cruel of Huchard to suggest another difficulty. If he deprives us of diagnosis by variability, we may well wonder what ground we have to stand upon. However, it is entirely improbable that neurasthenia would manifest itself in one direction alone for any length of time.

Neurasthenia varies much in type with age. The youngest cases verge into a type of acute simple anemia while the older cases approach the type of chronic diffuse nephritis. This may not have impressed others, but unconsciously I have found myself differentiating these various diseases in the younger and in the older group. Then there is the neuralgic type, usually differentiated from real neuralgia by the mobility and atypical location of the pain. Patients suffering from the nervous type complain most prominently of a general sensation of nervousness often described as “inward chills.” The tendency in all forms is to exaggerate the symptoms, and one who is not on the lookout is often enough deceived. These patients come with a tale of constant abject misery lasting for a month at a time, of sleeplessness and absence of appetite, when, if you happen to observe them when going about their ordinary occupations, they show no evidence whatever of real suffering.

When we come to those patients in whom the element of nerve depression or nerve exhaustion

seems to be a more prominent factor in the case than any other disease, we may divide the patients into two classes—those in whom there is an accompanying physical disease, and those in whom the physique seems to be fairly good and the nervous system itself almost alone at fault. The latter are the more chronic cases, and often enough verge closely upon the domain of hysteria, or even insanity. The former class of cases are the typical ones, most frequently met with, and those of most interest to the general practitioner.

There is a class of border-line cases in which the patients suffer from pains in the limbs and body, such as may very well be due to rheumatism. Definite rules for differential diagnosis cannot be laid down. Each case must be studied by itself. There is no doubt, also, that many symptoms in middle-aged persons caused by gout are mistaken for neurasthenic symptoms by neurologists.

An interesting symptom is described by Grasset of Montpellier under the name of amyasthenia, which he describes as a sensation of sudden fatigue. The symptom of the sudden giving out of the knees in neurasthenics is familiar enough. This symptom can receive fresh interest from this very good name. Laziness is more often a real disease than is commonly imagined; it simply means in those cases diminished evolution of the higher nerve energy.

Like hysteria, though in a less degree, neurasthenia resembles or presents the symptoms of many organic conditions, but there is this difference: the hysteric person often gives a clear and distinct imitation, while neurasthenia presents, as it were, a wavering and shadowy picture of real disease.

The differentiation between neurasthenia and insanity is not difficult in actual practice. After organic disease has been eliminated from our diagnosis, as far as possible, in a large number of cases there remain more or less definite manifestations of nervous disorder. Neurasthenia, however, is a condition which cannot always be diagnosed by exclusion because it is a condition which may accompany almost any disease. The number of marked cases of neurasthenia is not very great. Its very long course and the persistency with which the patients seek medical advice makes the disease appear so common. The milder types on the contrary, are very frequently met with.

It is absurd to call neurasthenia “the American disease.” No one can work in the large clinics and not be impressed by the existence of this condition among people of all nationalities. In fact, the worst cases we see are among foreigners. It is certain that among Russians, at least, the class of which we have such enormous numbers in New York, there are

found cases of neurasthenia which, in proportion to the organization of the patients, it would be hard to parallel.

The treatment of neurasthenia, like that of gout, must be summed up as an intelligent adaptation of well-known means to meet indications as they arise. It would, perhaps, be better to speak of management rather than treatment, as it covers hygiene and the control of the habits of life and thought, in addition to the administration of drugs. In the management of these individuals it is absolutely necessary to gain their confidence; and a great advantage is gained by having them understand to some degree the nature of their trouble. It has sometimes seemed useful to explain that the nervous system as a whole, the spinal cord, the nerves, and even the brain itself, is in an atonic state; that this debilitated organization is liable to be affected by the slightest causes, and that the symptoms will correspond to the sensation usually associated with stimulation of that part of the nervous system. Fortunately, many neurasthenic patients are people possessing mental power above the average, and when once they have been taught to corollate their many-sided symptoms with the general cause, and to disbelieve in the presence of constantly changing organic disease, they will have reached a much more hopeful plane from which treatment may be commenced.

A very trying feature in many cases is their chronicity. Many patients recover to a certain point so that they are fairly comfortable and are able to carry on their occupations, and yet they have not attained sufficient independence of mind to get along without medical supervision. These cases hang on in a physician's practice often for months and years. The physician feels from a strictly medical standpoint that he is no longer useful to such patients, but that the moral support derived from their occasional relation of symptoms is just as necessary to them as cod-liver oil to a consumptive, or nitroglycerin to a nephritic. Some of these patients persist in visiting a physician long after he has refused to give them any more medicine or treatment, and they talk themselves into a comfortable frame of mind and go away greatly benefited, there having been no treatment whatever. This moral support that neurasthenics demand is often very tiresome to one who is interested in pathologic conditions, but if the patient is treated with absolute honesty, it seems to be a legitimate part of one's medical work. These patients have put themselves under one's care for a condition that is just as much a disease of the mind as anemia is a disease of the blood. Physically, you have corrected, as far as you consider possible, the ailments that demanded drug treatment, and which

may have been the origin of the trouble, but the patient is left in a condition in which he is unconscious of his cure, or rather, in which the disease has been transferred to the mind. If, at this stage, we throw these people off, they invariably try all kinds of treatment, and are pretty sure to undergo medical or operative interference that will set up some new physical pathologic trouble. These patients must be accepted, and so long as they remain patients, must be given moral support. Some of these prolonged cases go on to complete recovery.

Thus, in that very severe and troublesome type, post-operative neurasthenia, we must labor to divert the channels of thought and erect a barrier of reason against any future idea of local disease—a task not made less difficult by the constant willingness of men devoted to pelvic medicine to continue an attempt to reach the base of the brain with the speculum and curette. These cases of post-gynecologic neurasthenia must, of course, be distinguished from essential organic disease only after a thorough examination by one especially trained in that department of work. To quote cases would only be to repeat the experience of every physician, but the subject has been newly impressed upon me by a recent experience with a patient in whom, after endless consideration of local disease, one eminent surgeon had removed the ovaries, and another later on had insisted that hysterectomy would be the only salvation, I finally concluded that the pain was chiefly of psychic origin and insisted upon her removal from bed and transference to the seashore. The result was more than the most sanguine person could have hoped for. The improvement was so great that the patient herself became convinced that her pain was not due to local disease, and agreed to discard treatment and resume, as far as possible, her ordinary life. The pain was much modified in character and frequency, and she is no longer a helpless invalid. Unless a diagnosis of neurasthenia had been made, she would still be under treatment for supposedly local lesions, thus adding misery to a condition bad enough in itself.

Of the gastro-enteric origin of neurasthenia, in certain rare instances, there can be little doubt, but the explanation does not cover the ground in a majority of the cases, and the expectation of curing such patients by some particular combination of drugs supposed to have an extraordinary antiseptic power, will lead to disappointment.

J. J. Putnam of Boston recommends the psychical treatment of neurasthenia, which consists chiefly in making the patient master the disease by exerting her reason and will. The wonderful results obtained by certain physicians are due to their personal influence upon the patient. The absence in the

American constitution of a craving for amusement, such as characterizes the French, for instance, leads to a neglect of sufficient recreation, and in that way exaggerates the results of overwork, and the tendency to neurasthenia. There has been a good deal of improvement in this respect since the use of the bicycle has become general, and since other outdoor recreations have become so popular, but the fact remains that in America we need to realize that recreation is essential to the performance of good work.

It is doubtful whether many diseases run their course without the neurasthenic element being more or less present, so the physician should estimate, discount, and treat it in every patient. I have a strong conviction of the importance of making such allowance for the neurasthenic element in all cases of disease of whatever nature; that it is necessary to realize in careful diagnosis that the patient herself under the influence of disease is capable of displaying an indefinite number of symptoms which have their origin, not in the disease, but in the patient under the stimulation of the disease. This is the case in many of the so-called reflex symptoms, that is, whenever disturbance of one organ is reflected from another in symptoms characteristic of the latter. In persons prone to neurasthenia, the whole nervous system reflects symptoms from any local stimulus, and on account of its variety of powers of giving rise to symptoms, the picture is a most confusing one. It is just as if a lamp were hung among a lot of mirrors. It is very difficult indeed to immediately pick out the lamp from among all its reflections. The immense importance of training in the objective examination of disease is here manifest; if we use our eyes alone we will be mistaken. A reflection of the lamp is seen, but the sense of touch immediately differentiates the warm lamp-shaped object from the cold, smooth surface of the mirror. Then again, if a shade be interposed between the lamp and the mirror the lamp retains its light, but the mirror loses its reflection. Or, if we move so that the line of reflection falls outside of our line of vision, the light from the lamp remains, but that from the mirror is lost. In the same way, in examining and testing the symptoms of patients, we can with care and thoughtfulness differentiate the real symptoms of the disease from the reflected symptoms of its accompanying neurasthenia.

Children Without Arms.—It is reported that a child without arms has been born recently at Laporte, Ind. It is strong and will live. This is the second child without arms born to the parents, the first being now three years of age.

THE INCREASING CONSUMPTION OF ACID FOODS AND DRINKS.¹

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It is attempted in this paper to establish the following principal points: (1) That there is an increasing consumption of acid foods and drinks; (2) that increasing demand for acids is fostered by the artificial customs and habits of modern life; (3) that the appetite so acquired and indulged is contrary to physiologic law.

The consumption of acid fruits and vegetables in recent years has been and is now promoted by the fact that these foods are procurable at all seasons—in the extreme cold of our winters as well as the heat of our summers. Obedient to the all-powerful dictum of the spirit of intellect, temperatures are modified and our soil yields the products of different climes at any season. The seductive influence of the presence of the product cannot be questioned. Add to this continuous supply the advantages of celerity of transportation, and the sequence is that very few of the vegetables and fruits hitherto regarded as natural summer products are absent from our tables in mid-winter.

It would be impossible within the scope of this paper to refer to the individual products concerned in the ever-increasing list of acid foods consumed in this country. Let a few suffice. Tomatoes, which depend for their flavor upon a peculiar acid (*acidum lycopersicum*), have rapidly grown in favor, until, from comparative obscurity, they have reached the head of the list. It has been estimated that during the years intervening since 1890 this vegetable has multiplied in production ten times.

Each week during 1885 it required twenty-five carloads of lemons to supply the city of New York. At the present time the daily demand exceeds that amount. This is true of other cities, and for the most part the country demand is proportionately augmented. Oranges are supplied in about the same relatively increased quantity. Limes are the most keenly acid of all fruits. Almost unknown outside the fashionable drinking halls five years ago, to-day they are a commodity. They are imported pickled as well as fresh, and the bottled juice comes to this country in large quantities from the West Indies. Congress has recently placed a special tax upon this fruit, because of its large importation. The grateful acid of the rhubarb leaf, in conjunction with binoxalate of potash, with the malic acid contained in gooseberries, currants, cherries, plums, apples, and pears, adds to the acidulous tide.

¹ Read before the Section on Physiology and Dietetics at the Forty-eighth Annual Meeting of the American Medical Association, Philadelphia, June 3, 1897.

Recently it was learned from a large commission merchant that apples, to be salable in our markets, must be decidedly acid. Sweet apples are employed only in making cider and vinegar. Some varieties of the small sweet fruit have almost disappeared, and their places have been filled by those that are tart enough to please the present acid taste. It is rare to find the mulberry, the black currant, the sweet cherry, or the sugar-grape. The almost innumerable grafted fruits, usually more acid than the seedlings, are extensively cultivated, and to the exclusion of the original stock.

It is claimed that the cheapness of sugar permits the consumption of acid fruits which otherwise would be distasteful. The ingenuity displayed in bringing acid into a condition to make it palatable serves to prove the increasing tenacity of the acid habit. Sweet and neutral vegetables, as beets, cabbage, lettuce, etc., are often rendered acid in order to give to them the much desired sour flavor. Forty thousand tons of cucumbers are raised and eaten within the limits of the United States each year, and this affords an excuse for the employment of about 1,000,000 gallons of vinegar and acid sauces or condiments. The large pickle factories that began with the decade have been reinforced by new establishments and additions that double their capacity for sending out acid products. The demand for piquant sauces has caused a large special industry to arise within the twelve years now ending. Meanwhile the home culinary department has augmented its capacity as to quantity and variety. A considerable amount of salicylic and boracic acid contributes to the preservation of fruits.

To visit the modern pie-bakery is to learn of human ingenuity employed in a most peculiar service. Boston boasts of a pie factory which turns out 1000 pies per hour, and the machinery seems to know its business better than the people who eat the pies know theirs. It is startling to hear of the remarkable pie-eating tendencies of the people of this country. A baker recently estimated that the American stomach is tortured weekly with 13,000,000 pies. Mineral and vegetable acids flavor the contents of eighty per cent. of these pies.

However formidable may appear the subject of acid consumption as already presented, the diabolic ingenuity of the *chef de cuisine* as he appears in public restaurants, hotels, clubs, railway dining-cars, steamers, etc., eclipses all. Wherever you dine—at Delmonico's, or at the humble restaurant where you can get three dishes for 25 cents—the foods are rarely of the alkaline character that nature intended. Especially is this so in the more pretentious dining-halls. From the tomato soup that is full of floating

sour and indigestible ornaments, and fish with sauce enough to constitute a dinner in itself, through the roast and to the final black coffee, there is a blend of an infinite variety of incompatible acids, flavors, and liquors. It is indeed the exception to find an ambitious caterer willing to serve an article before it has donned an acid habit. The natural flavor is so disguised that the palate of the connoisseur is taxed to recognize it.

Acid foods and drinks menace the urbanities and amenities of modern social life. A woman is to be commiserated who is invited to a *récherché* dinner of her social class, as furnished by the up-to-date caterer, if she has not the moral courage to decline. To attend such a dinner is to indulge in a feast of sours and a flow of acids from the first to the last service upon the *ménu*. If averse to acids, she nevertheless must yield a tranquil servitude and graciously accept the hospitality, or, by adopting the perilous liberty of declining some of the intricacies, brave the possibility of social ostracism. All the civil asceticisms of the nineteenth century may congregate on the *ménu* upon such an occasion, and yet may appear as a poem to the *chef de cuisine* and all others concerned. The modern fashionable women, anxious to outdo each other, are rendered not only somatically, but also psychologically, ascetic on the appearance of a brand-new, unexpected, and never-heard-of-before dish on their rival's table. Extraordinarily, it may have the appearance of perfection, but it will prove an incarnation of acidity and fermentative microbes. Never less than fifty incongruous elements combine on such occasions, with alarming disregard of consequences.

These dissipations are augmented on festive occasions. The learned ignorance of the *chef de cuisine* has its best opportunities at public places and at grand events. The chemist of the culinary department under such circumstances takes advantage of the chemist of the *prima via*. To all the acid inventions that can be placed upon the *ménu* are added the sherbets and the lemon and orange ices. The claret's purple tide mingles with the frolicsome vapors of champagne, in accordance with the wine-bibber's fancy. The punch-bowl, with its capacious supply of acid drink, has reappeared from comparative obscurity with an intensity of purpose that adds to the ascetic view. Beer, wine, or spirits join in the after-dinner tumult. The coffee cocktail and the Roman tea with spirits are among the most popular inventions of the enemy, and are regarded as heavenly twins by true Bohemians. But the list reaches out and defies limit, and whether the flavor be sweet or sour, there is hidden somewhere the acid ingredient, which will be recognized by the *prima*

via, even if it escape the observation of the senses. Thus, in all departments of social, private, and public life the *chef de cuisine* is making himself felt. Our own inclinations have been subjugated so that we require in one form or another in our homes some of these acid products or compounds.

Probably the first symptom of acid desire appears in the taste for the aerated table waters which are everywhere available. The realm of acid ingesta geometrically expands when we enter the domain of drinks. In the drinking-halls the casual observer cannot fail to be impressed with the tendency to indulge in acid beverages that are of recent origin, while those of more or less remote popularity still occupy their position as to quantity consumed. But if the question were asked to-day as to what is the national drink, it would be answered by the fizz of the soda fountain. We can all remember that only a few years ago the soda fountain was a rarity, and the variety on its list of drinks could be counted upon the fingers of one hand. To-day every hamlet and town in the country has them in numbers equal to their confectionery stores and apothecary shops. In the cities they are enthroned in every available locality, where hundreds hourly pay obeisance, and the variety of their flavors is only limited by the mental elasticity of the presiding genius. Foreign countries know little about the American soda fountain, but it increases the acid consumption one hundred fold in this country. The most profitable and largest part of the druggist's trade to-day is that of the product of the soda fountain. Mineral and vegetable sours contribute to the tide of acids which enter the stomach from this source. The carbonic-acid gas is swallowed and not inhaled. The late John Matthews of New York first introduced the idea of charging water with gas. This is supplied in immense tanks to the beer brewers to inflate their beer. The drums of compressed liquid gas for carbonating soda water are furnished and refilled by the brewers. In this and some other respects the soda fountain is a cross between the saloon and the restaurant. Small lunches are supplied at some soda counters, consisting of hot tomato and clam bouillons, beef tea, cocoa, chocolate, coffee, tea, ice-cream soda, cake, crackers, etc. The most common demand, however, is for the acid-flavored drinks, including mineral and vegetable acids, with water charged with carbonic-acid gas. Ice-cream soda has grown very popular within the past two years, and women and children throng about the soda counters during the summer to gratify the desire for this cool and acidulous drink. Bottled drinks of all kinds which are non-alcoholic are offered by the apothecaries and grocers, and have become

a large and recent adjunct to the acid-distributing trades.

Thus it appears that the vegetable products are prejudiced to the acid side. The culinary department adds its effective ingenuity to educate our tastes in the acid direction. Our drinks are rarely alkaline. All this obtains, too, in spite of the fact that acids are naturally rejected in early childhood, and only rendered tolerable or agreeable by acquired appetite. The increased consumption of acid foods and drinks cannot be accounted for by the increased population, for it is out of all proportion to its growth. Indeed, our population during the last decade has remained almost stationary, while the acid demand is increasing in geometric ratio each year. The consumption of acid foods has increased out of proportion to all other foods, and the amount of acid drinks ingested has doubled every year since 1890.

This extending and increasing appetite for acid foods and drinks is evidenced by the self-conscious need that many feel for anti-acids to counteract acidity of the stomach. Wherever sour drinks are sold there are also the anti-acid, as bicarbonate of soda, magnesia, etc., on hand for the accommodation of those who cannot uninterruptedly continue the acid pace. Again, medical men will admit that the trend of therapeutics is forced, however unconsciously, into the anti-acid and anti-fermentative realm. This is not only because of the introduction of sour acids, but is also due to the fact that the acid conditions favor the development of micro-organisms and promote fermentative conditions in the body. These micro-organisms are always more injurious in their effects than the acids that are used as foods and drinks.

The various modifications of the digestive function incident to the excessive use of acid foods and drinks are already with us, and the acidulous habits of the body mark a stage in civilization. These facts, stated in connection with the estimates above made, should satisfy all that the acid appetite fostered and gratified is contrary to physiologic law. It may further be argued, however, that the acids employed are not only unfavorable to proper digestion, but that they directly and indirectly modify the chemico-composition of the blood and bodily fluids, and must therefore seriously interfere with the somatic functions. It will be remembered that all the digestive acts are performed normally in the presence of alkaline media, except in the stomach. The normal percentage of hydrochloric acid in the stomach is one part to four thousand of stomach fluid, and this proportion of acid is sufficient to put an end to the alkaline action of the saliva on starchy foods. Another

duty devolving on the hydrochloric acid is to check organic fermentation and putrefactive changes by destroying the specific microbes by which they are induced. To accomplish its office in the most perfect manner possible, it must be carefully proportioned, for any excess or diminution, however slight, despoils it of its capacity and interferes with the succeeding digestive acts. The common habit of the American stomach is the sour or fermentative habit. At no time in the history of medicine has the stomach demanded such a generous special supervision as to-day, and in no country equal to our own. If the difficulties were limited to this organ, a thorough system of lavage and special treatment might terminate the trouble; but the succeeding acts of digestion are imperiled. Sufficient acids and ferments in the stomach continue to act upon the pancreatic juice and the bile to despoil them of their alkalinity and thus render their action of no effect upon a portion, if not all, of the food ingested. The intestinal juice is so decidedly alkaline that it will neutralize a large amount of acid before yielding up its alkalescence, but it is frequently compelled, as are the other fluids, to call upon the reserve alkaline elements of the body. Thus, not only the digestive fluids are depleted of their alkaline elements, but the alkaline bases and salts are reduced in the fluids and tissues of the economy. The ingestion of acids increases all alkaline secretion. Saliva, pancreatic juice, bile, and intestinal juice are all alkaline in their normal state. Nature has intended that the ingestion of food should increase alkalinity. After a wholesome meal of proper foods there is an increased alkalescence of all bodily fluids. The alkalinity of the blood is the measure of its germicidal capacity, and if it is normally alkaline it has the power of increasing immunity against infectious diseases.

Fodor says: "Rabbits, in whom either the blood is more highly alkaline or in whom the alkalinity increases under infection, offer greater resistance to anthrax bacilli than those rabbits whose blood is only slightly alkaline." Many authorities agree that the alkalescence of the blood prevents disease. Laboratory analyses and clinical observations are corroborative of this view. It is well established that reduced alkalescence of the blood-serum deprives it of its coagulating potency in proportion to the degree of alkalinity. The red blood-corpuscles contract in the blood-serum of reduced alkalescence. Under such conditions the blood deepens in color in the arteries. The cyanotic appearance of the surface of the body, and especially the purple hue imparted to the lips in many cases, may be accounted for by the condition of the corpuscles. Moreover, it must be remembered that the red blood-corpuscles are the

servants of the respiratory apparatus, and by this interference with their office there must be a reduction of the efficiency of the functions of respiration. The sympathetic nervous system is influenced by hyperacidity, and causes in turn a general functional derangement of the organs, notably the heart. The intellect is temporarily confused, and in some this confusion reaches out into incoherence of thought and action. The moral influence of these perturbed conditions of heart and mind extend to and pervert the imagination, and in extreme cases leave their permanent impress. The coexistence of somatic and psychologic asceticism can no longer be ignored.

CLINICAL MEMORANDA.

THE LOCAL USE OF HIGH TEMPERATURE WITH DRY HEAT IN THE TREATMENT OF RHEUMATOID AND OTHER DIS- EASES OF THE JOINTS AND TENDONS.

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IN the application of superheated air for the treatment of rheumatism and other diseases of the joints and tendons, my experience has been with the Tallerman-Sheffield apparatus as made in London. I had the apparatus in almost continuous use for seven or eight hours a day for about three months. A number of cases of rheumatoid arthritis were treated by it, though only four patients persevered beyond three or four treatments. Of these, Mrs. N., in whom the knee-joints were especially affected, received twenty-five *séances* of a full hour each. In the beginning of the treatment there was immediate relief, and until fifteen sittings had been given there was steady, though slow, improvement. After this there was a relapse and an increase of pain, so it is doubtful whether the woman was any better for the service.

Mrs. H., suffering from rheumatoid arthritis affecting the hands and knees, received twenty-seven treatments. During this time there were periods of apparently steady progress toward health, followed by rapid relapses. At the end of the treatment the knees were very much improved, though the hot applications had been made almost exclusively to the hands. The knuckle-joints were less swollen, and the hands more serviceable. Toward the end of the treatment the local hot-air baths produced immediate, and in some cases, alarming exhaustion. With the oncoming of hot weather it was evident that the general condition of the patient was made worse by the heat application.

Mrs. S. took eight treatments with some apparent benefit to the rheumatic joints, but marked increase of her debility. Mrs. McK. took eight treatments. At first there was some relief, but at the end of the course she appeared in nowise improved.

Of chronic rheumatism, not of the type of rheumatoid

arthritis, but resulting from acute attacks, one patient, Mr. C., received sixteen treatments. The joint affected was the knee. There was apparent softening of the adhesions, so that the false ankylosis was readily broken up, but this procedure was followed by great inflammation of the joints. The man finally discontinued the treatment because he did not believe he was obtaining any benefit. The results for good in this case must be considered doubtful.

In subacute rheumatism of the joints I have had experience with two cases. In one there was apparent cure after three treatments, but this was followed in two or three days by a violent relapse, for which the patient declined further treatment. One case of subacute rheumatism of the knee-joint, which had received no treatment before, rapidly recovered under the use of the hot-air bath and large doses of the salicylates and colchicum.

Of rheumatic neuritis, three cases were treated. In one, sciatica, such great aggravation of the symptoms followed the first treatment that it was impossible to get the patient near the apparatus again. In two cases of chronic type, four treatments were followed by great increase of pain. In one case, in which the nerves of the upper arm and the brachial plexus were involved, fourteen *séances* were followed by marked improvement, with increase of motion in the shoulder-joint and great improvement of the general condition. This patient, however, was also very carefully treated with counter-irritation, drugs, massage, etc., and it was not determined that pronounced good followed the use of the hot-air apparatus.

The results of the treatment with the hot-air bath in diseases of the joints themselves have not, in my experience, been sufficiently satisfactory to warrant the practitioner in urgently recommending patients to undergo the expense and difficulty of the treatments. It does not seem that the conscientious doctor can say more than that the remedy is perfectly safe and may be of service.

The fact that in my experience, and in that of others, the earlier treatments have been followed by an immediate acute paroxysm, would indicate that softening of deposits of urates, and consequent absorption of uric-acid into the system, may result. In most cases of chronic rheumatism, however, and especially of rheumatoid arthritis, as seen in this country at least, there is no distinct local deposit of urates. I have reason to believe that it is possible to affect the nutrition of the joints of the hand more than those of the feet; this fact, if indeed it be a fact, evidently being dependent upon the greater readiness with which a small joint can be superheated than can a large one. On the other hand, in cases of diseases affecting the tendons and ligaments, the results were very marked. In several cases of acute sprains the effects were immediate and pronounced. In one case of chronic inflammation following sprain of the soft parts of the ankle which had entirely disabled the patient for nine months in spite of careful medical treatment, complete restoration was obtained after six of the hot-air treatments. In two cases of disabling tenosynovitis in baseball pitchers, there was immediate relief of the pain produced by moving the arm, and a very few treatments

enabled the men to resume work. In one case of long-continued contraction of the wrist tendons and general distortion of the fingers, diagnosed by Dr. Weir Mitchell to be the result of gout, three treatments were followed by complete cure.

In using the apparatus, it was found that if the limb was lightly enveloped in patent lint, a temperature of 330° F. could easily be borne by most patients. We tried all temperatures in these treatments, but finally settled upon one ranging between 270° and 320° F. Of course, any carelessness in the use of the apparatus was liable to result in the production of severe burns, but those which occurred in my office were all at a lower temperature, and in the first use of the machine before the nurse had become thoroughly acquainted with the application of the remedy.

In my opinion, the local, hot, dry-air bath is of little value in rheumatoid arthritis; it has probably a field of usefulness in subacute gouty inflammations with deposits about tendons and their sheaths, or parts outside of joints, and is of great service in the treatment of ligamentous inflammations, and in tenosynovitis, whether of rheumatic or traumatic origin.

When the patient is heavily wrapped in blankets, it is possible to raise the general temperature several degrees as shown by the free sweating thus produced. The local bath is capable, without doubt, of relieving subacute or even acute lumbago and other forms of rheumatism in very much the same way that the free sweating by the general hot-air or water bath brings relief. There is not the slightest reason for believing, however, that the method acquires any further constitutional influence than has just been spoken of, and it seems an absurdity to suppose that it will distinctly affect the rheumatic diathesis, or in any other way prevent the recurrence of those relapses which in rheumatoid arthritis and chronic rheumatism are the destructive factor of the disease.

**A CASE OF EXOPHTHALMIC GOITER IN
WHICH, OWING TO PANOPHTHALMITIS,
THE ENUCLEATION OF BOTH EYES
IN SUCCESSION BECAME
IMPERATIVE.¹**

By JAMES A. SPALDING, M.D.,
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UP to April, 1895, Mr. A., a Dane by birth, had been perfectly healthy. He was then about thirty years of age and a hard-working and industrious farmer. On the 10th of April he had been working harder than usual, when he suddenly felt dizzy, and every object that his glance embraced appeared double. The lateral separation of the images was quite considerable, but he was sure that they were on the same level. On covering his eyes in succession, to discover if there was any difference in the sight which would account for the disagreeable diplopia, he found that the sight of the right eye was slightly blurred. On covering the right eye, he failed to see double, and the dizziness ceased. On covering the left

¹ Read at the Thirty-third Annual Meeting of the American Ophthalmological Society, Washington, D.C., May 5, 1897.

eye and trying to move about he felt nearly as dizzy as with both eyes open. He consulted his family physician, who sent him to an ophthalmic surgeon, who diagnosed paralysis of the internus muscle (as I later heard), prescribed iodid of soda, and directed the patient to wear a shade over the right eye to prevent the very annoying diplopia. A weak astringent lotion was also ordered on account of a well-marked inflammation of the lower conjunctival fold.

A few weeks later, the right eye, which previously had not projected in the least, began to bulge forward quite noticeably, but the diplopia was not so disturbing as before, since at about the same time the sight of this eye sensibly diminished. After undergoing treatment with the galvanic current the patient was told by the consulting oculist that nothing more could be done for the eye, and was advised to see his family physician, owing to other symptoms needing medical treatment. Enlargement of the thyroid on the right side was now quite evident.

The medical treatment then instituted, whatever it may have been, did not seem to be of much benefit to the patient's health, for the thyroiditis, with increased heart action, and protrusion and deviation outward of the right eye still persisted. The cornea, also, according to the patient's assertions, now became so gray and hazy that the sight was reduced to a minimum, although he could still see objects held close to the eye. The sight of the left eye remained perfect. Whether at this time the left eye protruded or not is impossible to say, but so far as could be determined it remained in its normal position. The difficulty in forming an opinion in this respect lay in the fact that the protrusion of the right eye was so great as completely to throw into the shade any displacement of the left eye.

Having been several months under treatment, without any benefit, Mr. A. consulted me in August, when I discovered the following conditions: The right eye was enormously protruded from the orbit, and the eyelids so much distended over the cornea as to remain immovable, despite every effort to close them. There was excessive chemosis of the conjunctiva, which surrounded the entire cornea with a dry, fleshy wall, as nearly as can be described. The cornea was very much dessicated, and in the center there was a small abscess. Hypopyon also was present. Oblique illumination seemed to show that the pupil was largely dilated, but this was difficult to determine with any accuracy owing to the haziness of the cornea. The cornea was quite insensible to touch. There was perception of light in all directions. The tension of the eyeball was increased.¹

The patient had been suffering for several days from intense pain in the eye and orbit. He could not sleep without the exhibition of large doses of narcotics, and the latter were contraindicated by his bodily condition. His

temperature was more than 100° F. night and day, and the pulse ranged from 130 to 160. The eye resembling one affected with panophthalmitis, and being rather timid about enucleating in that condition, I resorted to leeches to the temple, to scarification of the conjunctival folds, and to division of the external canthus. Finally, however, all these means failing to relieve the condition of pain and suffering, the eye was removed. On opening it, immediately after the operation, pus was found in the anterior chamber, as well as behind the ciliary processes on the temporal side, and in one separate focus in the vitreous, just as we see it in panophthalmitis following perforating injuries of the globe.

The result was very favorable, and the patient soon returned to his home. Careful examination before his departure showed well-marked swelling of the thyroid, on the right side chiefly, though moderate indeed in proportion to the enormous protrusion of the orbital tissues, which even after the removal of the eye pressed far between the commissure of the eyelids, preventing any attempt to close them except by actual force. The whole orbit remained then, and still remains, filled with hard, brawny tissue.

Thyroid extract was administered in small and regular doses for a long time, and being well borne was continued, with the result of somewhat reducing the swelling of the thyroid. Three or four weeks later slight conjunctivitis was noticed in the lower fold of the left eye, but it disappeared after using a mild boric-acid lotion. There was no protrusion of this eye. The pulse remained about as before, but there was no rise in temperature above normal. Through the early winter the eye remained in excellent condition, and the sight was perfect.

On the 9th of January, 1896, and without previous warning, except the occurrence of slight pain in the temple the night before, the left eye became irritated and the sight affected. I saw the patient the same day and observed well-marked chemosis of the lower conjunctival fold, and protrusion of the eyeball forward and a trifle upward, but the media were still transparent. The ophthalmoscope revealed nothing but extremely tortuous retinal veins. In a day or two very marked optic papillitis set in, the papillæ rising high above the level of the rest of the retina and the retinal vessels becoming even more tortuous than before. The sight rapidly decreased, due not only to this condition of the optic nerve but to haziness and then to absolute necrosis of the cornea. In ten days the appearance of this eye resembled that of its former partner, and sight was reduced to perception of light. Furthermore, persistent pain ensued in the temples and orbit, and soon became unendurable except after using sedatives. Cocain seemed for a day or two to keep the cornea moist, but when that effect ceased cloths soaked in albolene were employed. The lids, it is hardly necessary to say, could no longer be closed over the cornea owing to the extreme protrusion of the globe.

At this time, with a rise in temperature to 103° F., and the pulse more rapid than ever, there seemed to be no recourse except enucleation, though naturally we wished to give the poor sufferer every chance to retain

¹ I notice in consultation with younger men, nowadays, that they talk a great deal about "tension." They say, for instance, "There is tension in that eye." I think, and I always say so at such times, that we ought to cling to the old-fashioned limitations of the word "tension," and say "increased tension," or "diminished tension," for every eyeball, no matter how soft, has some tension or it would collapse *in toto*. To say that an eye has "tension" does not convey an accurate idea of the condition.

some sight. One suggestion was to evacuate any pus that was present in the orbit, but the condition of the tissues in the opposite orbit, still hard and stiff months after enucleation, showed us how hopeless such a procedure would be as it might subject the patient to two operations if no pus was discovered. There was no corneal abscess present, as in the other eye, and as I thought the cornea might perhaps be cleared by some treatment or operation to me then unknown, I consulted all available authorities for similar cases. The only case resembling mine was found in Mooren's "Fuenf Lustren," a book containing innumerable clinical observations, which are often of great value to the ophthalmic surgeon when he is in doubt. The case of Mooren's was that of a woman who for many months had been overwhelmed with mental anxiety arising from the care of a paralytic sister and an aged and feeble father, who was subject to frequent attacks of angina pectoris. The increased action of the heart in this woman was at first attributed to her mental overwork, and the injection of the lower conjunctival fold to a slight conjunctivitis, but after awhile it became plain that the eyeballs were gradually being protruded. Gray infiltration of the cornea soon set in, first in one eye, and then in the other. A week later Mooren was called in, hastily, only to find that during the night the left eye had burst open after violent pain, and on removing the improvised bandages he found the transparent lens lying between the lids, while the vitreous protruded from a large gap in the cornea. The corneal infiltration in the right eye persisted for months, and the slight perception of light gradually increased. After nearly a year of waiting and treatment, an iridectomy was performed, and the patient could see sufficiently to count her own fingers close to her face, but soon again the sight was reduced to mere perception of light. This, then, the only accessible report of a case, did not offer much encouragement for my patient.

While still considering what was best to be done, the corneal infiltration assumed a purulent form, with rapid hypopyon and with the occurrence of a perforating ulcer of the cornea. Finally, a day or two later, the patient insisted that the eye should be removed as he was obliged to confess his utter sightlessness, and he was unwilling to endure such constant pain and suffering. The operation was very difficult, owing to the infiltration of the orbital tissues, and I had to proceed very slowly, the scissors appearing to have no cutting power, though apparently sharp enough in ordinary enucleations. Well-marked purulent choroiditis was discovered on opening the globe. The optic nerve was swollen for some distance behind the globe, the swelling extending into the orbital tissues.

The patient was soon discharged, without any unfavorable symptoms, and is now in even better condition, physically, than when I last saw him one year ago. He still uses the thyroid extract in five-grain doses from time to time for a period of a month or two, and attributes his good health to that form of medication. The thyroid gland is now but little swollen.

A brief résumé of this interesting case shows us, judging from the ophthalmoscopic examination of the left eye

before the cornea became infiltrated, that with the enlargement of the thyroid gland, almost exclusively on the right side of the neck, first the orbital tissues of the right side and then on the left became inflamed and engorged, causing optic neuritis and gradual obstruction of the nutrition of the eyeball. This obstruction occurred first in the optic nerve, then in the anterior portion of the globe, and then extended to the cornea, which desiccated and sloughed. The consequent purulent infiltration of this tissue and occurrence of an ulcer finally excited a typical choroiditis purulenta or panophthalmitis. Finally, the case shows that with proper aseptic precautions, eyeballs affected with panophthalmitis can safely be removed.

SPECIAL ARTICLE.

INSANITY FROM PRISON CONFINEMENT.

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FORMERLY PHYSICIAN TO THE EASTERN PENITENTIARY OF PENNSYLVANIA.

WITH the exception of a few South American prisons, solitary confinement is not in use in any prison in the world. Wherever the so-called cellular imprisonment is in vogue, the convict is not only permitted to see his relations, prison officials, officials of prison societies, etc., but he is allowed to read, to write letters, and to take exercise. In the Eastern Penitentiary of Pennsylvania, of which so much has recently been written and which is now under investigation, solitary confinement has not been practised for the last fifty years at least. And separate confinement has not been possible for the last twenty years (by separate confinement is meant the isolation of the prisoner from his fellow-prisoners). Because of the limited number of cells two and even more prisoners have been obliged to occupy one cell, and only when a convict has been imprisoned for sodomy, or has showed symptoms of insanity, has he been placed in a cell by himself. Under such circumstances it is impossible to say that the system of solitary confinement produces insanity, since that method of correction is practically nowhere in use, but time and time again charges have been brought against the Eastern Penitentiary inspectors to the effect that their system is productive of more insanity than the so-called congregate system. What are the facts?

It is well known that the majority of the convicts that become insane in prisons are persons who have committed serious crimes such as rape, incest, and manslaughter, crimes against the person rather than against property. For such crimes long sentences are usually received. Thus twenty-one insane and imbecile prisoners received into the Eastern Penitentiary during one year (June, 1894, to June, 1895) had an average sentence of three years and eight months, while the average sentence for the convicts generally was not more than two years and five months. Among these twenty-one convicts were several whose term of sentence ranged from five to fourteen years. Another, not included in this list, was serving out a life sentence. While, on an average, twenty-seven per cent. of the general prison population is committed for crimes

against the person, in this instance thirty-six per cent. of the insane persons were sentenced for this reason. It follows, therefore, that if insane convicts are not transferred to regular insane asylums the number in the prisons will constantly increase even if the annual commitment remains the same.

I contend that most of the cases of insanity found in prisons are not the result of confinement but rather the cause of imprisonment; that the insanity is largely responsible for the criminal actions of the particular individuals, and that the judges of the courts have either not recognized the unsound mentality or, recognizing it, have refused to take it into account. One judge, sitting in Philadelphia, gave it as his opinion that because a prisoner was insane "there was all the more reason for hanging him."

The managers of the Eastern Penitentiary have hitherto paid little if any heed to the insane convicts committed to their care. The warden, a man brought up and schooled by Richard Vaux, whose contempt for science and modern ideas was well-known, is inclined to consider a person "inherently depraved" who is not amenable to ordinary reason. In his table of causes of crime, which was compiled by Vaux, we find that of the 22 men spoken of above, the warden has set down the insanity of 3 as due to inherent depravity, 2 to physical disease, 2 to moral weakness, 2 to family influences, 4 to faulty administration of the law, 4 to evil association, and 3 to idleness. For instance, in the case of an Italian who was undoubtedly insane upon admission and who was sentenced for assault and attempt to commit rape, the warden considered his crime as having been due to "too much license and no repressive means to control self-will in the young!" Another man who was sentenced to fourteen years for committing rape, and who had attempted suicide in the county jail, and showed symptoms of acute dementia shortly after his reception, the warden considered "weak in moral power!" A third man, who was insane when admitted and who had committed a murder and received a life sentence as there was doubt as to his mental condition, the warden thinks committed the crime because of "laxity in the administration of the law!"

A man who commits a crime may be sane or insane; if insane he cannot legally be tried for crime; he is not responsible and therefore not culpable. If, unfortunately, his insanity is discovered only after his trial, as very often happens, then he has been tried unjustly and the brand of convict should be removed by law. If he is not a convict, why should he be placed in an asylum for *criminals*?

In my experience in the Eastern Penitentiary it did not happen more than twice or three times during a year that a prisoner who was perfectly sane on entrance (according to our record) and without an insane tendency, became insane during confinement. For these few cases of insanity space can be found in a separate ward in any State asylum. It is a disgrace to the civilization of the present age to imprison the insane, the feeble-minded, and the imbecile as convicts for a definite period, and then after the expiration of their sentence to set them free without let or hindrance, allowing them to commit fresh deeds of

violence and to be again sent to prison for another term of years. I have known of a chronic paranoiac being sentenced to the Eastern Penitentiary six times in the course of eight years for deeds which were clearly the result of his mental infirmity, and my remonstrance against such a procedure was not encouraged by the authorities but rather opposed. I have known of an imbecile boy receiving a sentence of fifteen years for setting a barn on fire, and his knowledge of the right and wrong of his action was no more than that of a two-months-old baby.

The courts are primarily to blame for this state of affairs, but a wise and intelligent prison management should be more anxious to make known this fault and should urge some action to prevent its occurrence. The medical profession is also to blame since because of the confusion that exists in connection with the acceptance of expert testimony the public has been inclined to ignore the findings of alienists and to allow men to go to prison who are fit subjects for asylums. It seems to me that it is necessary for the judges and medical experts to come to some definite understanding in regard to insanity and what constitutes culpability before the insane convict question can be settled.

MEDICAL PROGRESS.

The Results of the Medical Treatment of Perityphlitis.—

KLEINWACHTER has published in *Mitteil. aus d. Grenz. gebieten d. Med. u. Chir.*, Bd. I., p. 717, an interesting article describing the results of treatment without operation of 147 cases of perityphlitis admitted into the medical clinic of Breslau from 1874 to 1889. The object of treatment was to obtain complete relaxation and quiet of the intestinal tract in order to favor the formation of adhesions. The patient was immediately put to bed, and was not allowed to move for any purpose whatsoever. Opium was given, and the diet was strictly regulated. In the beginning of the disease, ice bags were laid upon the abdomen, and later these were followed by warm poultices. Fifteen to twenty drops of tincture of opium were given in the beginning of the illness, and from eight to twenty drops three or four times daily as long as there was pain or distention of the abdomen. No cathartic was given, even if there was no movement of the bowels for from seven to nine days.

A more exact classification of these cases shows that there were 115 of them to which the name perityphlitis would still be given (in Breslau). Of these, 101 patients, or eighty-eight per cent., were discharged cured; twelve, or ten per cent. were improved, while only two, or not quite two per cent., died. In twenty-four per cent. of the cases which could be followed, there was a recurrence, and this occurred almost invariably in less than two years.

This mortality ought really to be given as higher than it is, as the 147 cases include fifteen of peritonitis resulting from perforation of the vermiform appendix, with six deaths. There were also nine cases of perityphlitis, without a death, which gives a mortality for the whole series of about fifty-five per cent.

Hereditary Continuous Shedding of the Finger-Nails.—In the *Journal of Cutaneous and Genito-Urinary Diseases*, June, 1897, MONTGOMERY mentions a case of constant shedding of the finger-nails occurring in a healthy, well-formed Frenchman. The patient's mother and two maternal uncles were likewise affected. Other relatives had bad nails but none were affected in exactly the same way. In his case, some two or more nails were constantly loosening, a process taking three months to become complete, and not accompanied by any pain. The new nails were in every respect normal. An affected nail grew dull and yellowish-white just over the lunula, and then lifted away from the nail-bed from behind forward until it was completely separated.

An Epidemic of Mastitis.—In the *Zeit. f. Geburt. und Gynäkol.*, Bd. xxxvi, p. 473, FREUND describes a moderate epidemic of mastitis which occurred in one of the wards at the Lying-In Hospital in Strasburg. All of the six patients in this ward were affected within seventeen days. The cause of infection at first was not clear. One of the women entered the hospital with an abscess already formed. In another instance, it seemed plain that the abscess of the breast was set up by a nursing infant whose mouth was in bad condition, as it contained aphthous patches and abundant staphylococci. The origin of the other cases was not clearly determined. Direct contact seemed to be disproved, and the writer was of the opinion that the germs were carried from one patient to another by the air.

A New Method of Sterilizing Water.—SCHUMBURG (*Deutsch Med. Woch.*, No. 10, 1897) describes a new method of sterilizing water by the use of bromin, one grain being sufficient to destroy all the bacteria in one quart of water, the bromin afterward being neutralized by ammonia so that a clear and tasteless water is obtained. For this purpose, a twenty-per-cent. solution of bromobromid (bromid, one part; bromin, one part; water, five parts) is used. Thirty minims of this solution are sufficient to sterilize in five minutes one quart of river water. If the water is very hard or very foul the lime salts and the ammonia contained in it neutralize a part of the bromin, and in such cases it is necessary to add the bromin solution until a faint yellow color is obtained and persists for at least half a minute. An equal quantity of a nine-per-cent. solution of ammonia suffices to neutralize the free bromin. It is desirable that these amounts should exactly correspond, although a faint taste either of bromin or of ammonia is not objectionable. When the bromin is exactly neutralized, the water is clear and can scarcely be distinguished from the original water, while the amount of bromin salt which it contains is so small that it has no effect upon the system. This method bids likely to be of especial use in times of epidemic, in war, etc.

The Percentage of Astigmatic Eyes in School Children.—STEIGER (*Corres. Bl. f. Schw. Aerzte*, May 15, 1897) found that of about twenty thousand eyes of children in the primary classes in the schools of Zurich, 1570 were more or less defective. About one-half of these, or 777,

were astigmatic. In some of these the affection was light, but in 662 it was described as considerable, while in 318 it was marked.

Muscular Paradox in Hysteria.—By the term "muscular paradox" ALDRICH (*Cleveland Med. Gaz.*, May, 1897) refers to the apparent inconsistency in the use of certain muscles often shown in hysteria. Thus a man, who while lying in bed can use all of his muscles with quickness and power, may perhaps be unable to use them at all while on his feet. A singular illustration will suffice to show the means used to detect this muscular paradox. Requesting the patient to keep his leg rigidly extended, the examiner grasps the ankles with one hand, while the other is placed in the popliteal space, and the amount of force required to flex is noted. Next, with the hands in the same position as before, but with the leg at an angle of 90° to the thigh, the patient is requested to extend the leg, and the examiner observes the muscular force required to prevent it. Though in these two tests the normal contraction of a single muscle is involved, yet the examiner may find that the resistance necessary to overcome this contraction is in one case perhaps double what it is in the other. Other muscles are to be tested in a similar method.

Actinomycosis of the Face—Recovery.—In *La Presse Medicale* for May, 1897, DUGUET reports a case of actinomycosis which involved extensively the cheek and lower jaw of the right side, in which complete cure was obtained in six months by the administration of large doses of the iodid of potash internally and the application externally, morning and night, of tincture of iodine and glycerin in the proportion of one to four. The patient, in the beginning, took one gram (fifteen grains) of the iodid of potash, which was rapidly increased to five a day without any disturbance of the stomach or the production of any symptom of iodism. Improvement was noticed very early, and gradually the doses of iodid were diminished to two grams (thirty grains) a day. The article is accompanied by colored plates which demonstrate that the cure was complete.

Relief of Thirst in Persistent Vomiting.—In the *British Medical Journal*, April 3, 1897, HARDMAN tells of a case of persistent vomiting in which nutritive enemata had been given for over two weeks. Nothing, either solid or liquid, could be retained on the stomach, and the patient complained bitterly of thirst. For three successive days from forty-five to fifty ounces of sterilized normal salt solution was injected into the cellular tissue of the abdomen and flanks. The patient experienced great relief of thirst, and the general condition was so much improved that an exploratory laparotomy was performed, but this unfortunately revealed a hopeless condition of things. Each saline injection was followed by only a little soreness, and the fluid was completely absorbed in twenty-four hours. From his experience with this case, Hardman is of the opinion that a quart of water might be injected each day into one of the four quadrants of the abdomen, and that by the time the fourth quadrant was used for injection the first would again be available.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, JULY 17, 1897.

THE BILL BEFORE CONGRESS ABOLISHING ANIMAL EXPERIMENTATION IN THE DISTRICT OF COLUMBIA.

THE editorial under this caption which appeared in the MEDICAL NEWS of July 3d has called forth some criticism from Dr. Leffingwell, which is published in another column. In his closing remarks, the doctor affirms that some of the objectionable features of the bill have been entirely eliminated and do not appear as it was reported to the Senate. The doctor regrets that these improvements in the bill, for which he takes to himself some credit, and which, undoubtedly, is justly due him, are "so widely unknown or so frequently overlooked." In this way he very courteously attempts to explain, on behalf of the NEWS, what he claims are misstatements of facts. We beg leave to assure the doctor, however, that the latest revised edition of the bill was before the editor when he penned the editorial in question, and while he recognized the improvement which the bill had undergone, the strictures made upon it are still pertinent, and the opinions there expressed will be the convictions of anyone who will carefully read the revised bill both literally and between the lines.

The alleged misstatements of facts are placed under three heads: The writer denies (1) that the practical effect of the bill would be to prevent all animal experimentation in the District of Columbia; (2) that the Humane Society of Washington is endeavoring to usurp to itself the power of controlling all animal experimentation, and (3) that the cruelties are not imaginary.

If we look into the history of this measure, we find that it originated in the Antivivisection Committee of the Washington Humane Society, and in the various discussions which have followed its presentation it has been particularly asserted that its passage is desired as much for its influence as a *precedent for State legislatures as for its direct effect in the District*. Moreover, in its original draft, inspectors were to be appointed from among the officers of this society. Even now, in its revised form, the bill takes the authoritative supervision of this important scientific work out of the hands of the proper authorities and places it under the direction and control of the political officials of the District. These local officials would necessarily be more or less under the influence of their fellow townsmen and townswomen and reflect in their official acts, the latter's sentiments and desires.

Had there been evidence that instances of cruelty to animals had existed in the District of Columbia, the vigilance committee of this Washington Humane Society would have been able to secure it and present it in answer to the challenge given them for proof of their allegations. In regard to this matter the Secretary of the Department of Agriculture, Mr. James Wilson, in presenting his objections to the bill as it now appears, says:

"It is not shown that there have been any cruel experiments performed in the District of Columbia, or that any such experiments are now in progress, or that there are likely to be any experiments of this character in the near future. The only allegation of such cruelty having been perpetrated was contained in a letter from Dr. A. L. Rauterberg in reference to mutilations of a dumb animal which he had seen in the Army Medical Museum. His statement is indefinite and does not specify the time, the species of animal operated upon, or the person perpetrating the cruel act. The records show that Dr. Rauterberg was at one time employed in the Army Medical Museum in a clerical capacity, and that he has not been connected with that institution for twenty-three years.

Responsible medical officers connected with the museum testify that there have been no painful experiments performed there since 1870, or, so far as they have been informed, previous to that time. Need I say it would not be wise to pass legislation, which may retard science and interrupt investigations now in progress and necessary for the control of disease costing our farmers many millions of dollars annually, upon this inconclusive evidence as to something which is alleged to have occurred in the Army Medical Museum a quarter of a century ago."

As all charges of cruelty have therefore been disproved, it does not seem at all irrational to use the term "imaginary cruelties" in reference to these allegations.

The proposed legislation is unnecessary; the Government laboratories are under proper official supervision, and the laws of the District now in force are amply sufficient to prevent cruelty to animals. This effort to obtain legislation in the District of Columbia by the Congress of the United States is not based upon any evidence relating to abuses in this District, but is being urged by the members of the Washington Humane Society, who have become excited by reading the antivivisection literature sent to them by Dr. Leffingwell and his friends in Massachusetts, who having failed to secure legislation in that State have transferred their field of action to the Capital of the Nation, where they knew in advance that they had a friend in a prominent member of the Committee on the District of Columbia in the United States Senate.

Now, let us consider the main point of the discussion at issue, which is the effect of the bill upon animal experimentation. Upon this point Secretary Wilson aptly remarks, that while there "appears to be a difference of opinion as to the effect which the bill is intended to have, an examination of its several sections shows conclusively that those who favor it need to make themselves familiar with its provisions not less than those who oppose it." In demonstration of this fact, the Secretary proceeds to describe instances in which the bill will restrict, and in many cases actually prohibit very important investigations. For instance:

"We wish to determine whether a calf or a pig will contract tuberculosis by eating infected milk which has passed through the separator, or whether hog-cholera may be contracted from the separated milk from creameries. The only way to determine this is to feed infected milk which has been passed

through the separator. But if an animal contracts one of the diseases in that way it will probably become fatally infected; it will probably suffer pain. As this is not an inoculation experiment, it contravenes the provisions of the bill unless the animals are kept under anesthesia during the entire course of the experiment, which would be absurd and impossible.

"Again, we wish to determine whether susceptible cattle will contract Texas fever when separated from infected ones by an ordinary board fence. It is important to test the question by actual experiment. Here, again, we would contravene the provisions of the bill because if the animals contract the disease they would suffer pain.

"Or, we wish to know whether the contagion of a disease like bovine pleuropneumonia may be contracted from stables, or whether it must always pass direct from animal to animal through the expired air. To determine this, animals must be confined in stables where diseased cattle have been. If they contract the disease they necessarily suffer pain. Hence, the animal must be kept for weeks under ether or chloroform or contravene the provisions of the bill."

These are simply every day cases of experimentation which will be prohibited by this bill. Other important ones are mentioned by the Secretary in the communication referred to, and the assertion is made that many others could be instanced were it deemed necessary. It thus becomes apparent that the provisions of the bill do restrict this class of experimentation and absolutely prevent and prohibit many lines of work. Other provisions of the bill impose heavy penalties whenever an experiment varies in any way from the lines laid down in the bill. Moreover, a system of espionage by inspectors unacquainted with the purpose or necessities for original scientific work in any field, is provided for. These provisions make it possible for a local humane society to be represented in the list of inspectors and enable them to obstruct, harass, and prevent experimentation upon animals by frequent visits of the inspectors, by prolonged investigations of the laboratories, and by repeated calling, through the commissioners, for detailed reports of all experiments. Considering the bill, therefore, in its fairest and broadest interpretation, it must be regarded as a great restriction upon proper scientific animal experimentation, and, when we take into consideration the origin of the bill and the motives which prompted it, *viz.*: "for its influence as a precedent for State legislation as much as for its direct effect in the District," and the persistence of fanatics in

harrassing and obstructing the work of those whom they flatter themselves they are especially called upon to restrain, we are justified in our assertion that the practical and ultimate effect of this bill would be to abolish efficient animal experimentation in the District of Columbia.

ECHOES AND NEWS.

Honors to Dr. Prudden.—The degree of LL.D. has been conferred by Yale University on Dr. T. Mitchell Prudden, Professor of Pathology in Columbia University.

Smallpox in Tennessee.—Since March 18, 1897, there have been reported 22 cases of smallpox in Memphis, Shelby, and Madison counties, Tennessee. The continued prevalence of the disease is causing much uneasiness.

Smallpox at Bellevue.—The Marquand pavilion is under quarantine on account of a case of smallpox which occurred there last month. The patient, a child three years of age, was supposed to be suffering from chicken-pox when admitted to the hospital.

Death of Professor Fresenius.—Professor Carl Remigius Fresenius, the great chemist, died at Wiesbaden, June 10th, of apoplexy. He was born at Frankfort-on-the-Main in 1818. He was made professor of chemistry at the Institute of Wiesbaden, and was the author of several works on chemistry which have a world-wide reputation.

A New X-Ray Apparatus.—A new X-ray apparatus, possessing all the advantages of the Edison machine and none of its defects, has been invented by Dr. Jarvis S. Wight, Jr., and Professor Rufus Sheldon of the Polytechnic Institute, Brooklyn. An improved transmitter, by means of which the ordinary electric-light current can be used, is a distinctive feature of the apparatus.

Yellow Fever at Panama.—Four deaths from yellow fever occurred on a steamer from Panama which arrived on the 1st inst. at San Francisco. Passengers on the steamer say that the authorities at Panama endeavor to suppress the facts in regard to the ravages of the scourge at that port, and that it is dangerous for unacclimated persons to spend any time ashore at the Central American ports.

Sanitarium Struck by Lightning.—The sanitarium of Dr. R. P. Johnson on Missionary Ridge, near Chattanooga, Tenn., was recently struck by lightning and the building destroyed. Although panic-stricken the patients were removed uninjured from the burning building. No lives were lost, but two employees were rendered unconscious by the shock, and Dr. Johnson was slightly injured by a piece of falling timber.

Electric Light and Sailors' Eyesight.—The *Revue du Cercle Militaire* says that men employed on men-of-war are frequently affected with eye complaints which in some cases lead to total blindness. These are supposed to be

due to the intensity of the electric light used on board war ships. It has also been observed that gray and blue eyes, the iris of which is not much pigmented, are more likely to be affected than brown eyes.

Castile Soap and the Plague.—The prevailing impression that the famous soap of Marseilles was made from the pure olive oil of the south of France has been swept away by the fact that the soap factories have been obliged to close because of the quarantine against India. It appears that for twenty years the manufacturers have been supplying the market with an inferior product made from common linseed oil imported from India.

New Puzzle for Scientists.—According to the San Francisco *Examiner* a remarkable instance of an abnormal growth has been discovered in that city by Dr. Yoakum, who recently removed a tumor from the base of the spinal column of a nine-months old boy. The tumor contained a human embryo about four inches long. The bones were nearly all developed, especially the thigh and hip bones and portions of the vertebral column.

A New Style of Letter Linen.—The following letter written on an ordinary gentleman's linen collar was recently received at the San Francisco Board of Health Office: "Board of Health: Having used up all the writing paper I possess in a vain endeavor to have the Bryant Street sewer, from Twenty-sixth to Army, attended to, I am now compelled to use my linen to inform your office that its condition warrants attention. There is evidently some one connected with the Health Office not doing his duty, and whoever the collar fits let him wear it. Within the past year there have been thirty deaths in the immediate vicinity of this sewer, and your records will show that at the present time there are 100 sick children living near this morass. Yours truly, M. P. JONES."

Obituary.—The faculty of Bellevue Hospital Medical College has spread upon its records the following resolutions regarding the death of Dr. J. Lewis Smith. "It is with sorrow that we record in the minutes of the Faculty of the Bellevue Hospital Medical College, the death on June 9, 1897, of Dr. J. Lewis Smith, late Clinical Professor of Diseases of Children. Dr. Smith was a teacher in the College for thirty years. He brought to his instruction a ripe experience and sound judgment, and had attained a most enviable reputation, not only as a public teacher, but as a voluminous writer on the subjects of his special studies. His loss will be deeply felt, not only by the profession, but by the public at large, who benefited so much by his skill and devotion."

The Long Island College Hospital.—This institution will open its next winter's session in the new Polhemus Memorial Clinic, the gift of Mrs. Caroline H. Polhemus of Brooklyn. The building is situated on the corner of Henry and Amity Streets, and has a frontage of sixty-eight and ninety-two feet respectively. The design of the exterior is in French Renaissance. In plan the building is a rectangle with large courts for light and air on the sides opposite the street fronts. The two lower floors

will be devoted to dispensary work. The clinical lecture-room occupies the central section of the building from the third to the fifth floors. The chemical lecture-room on the sixth floor is similar to the clinical lecture-room. The eighth story is given up to the anatomic division, there being two large dissecting-rooms lighted by skylights, a Prosector's room, Demonstrators' room and bone library. The construction of the building throughout is of the most substantial and enduring type and thoroughly fire-proof.

CORRESPONDENCE.

THE BILL RESTRICTING ANIMAL EXPERIMENTATION.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: Are scientific interests ever really promoted by misstatements of facts? I am sure that THE MEDICAL NEWS does not think so; and that whenever inaccurate statements appear in its editorial columns they are due to misinformation. The NEWS regards with strong disapproval the bill now before Congress, placing the practice of vivisection in the District of Columbia under governmental supervision. But may not this sweeping condemnation rest upon imperfect information regarding the character and scope of this measure? Permit me at least to call attention to your editorial in the issue of July 3rd, and to some grave errors of fact therein contained.

1. You affirm that this is a bill "abolishing animal experimentation in the District of Columbia," and that it is "destined to prevent all animal experimentation." If this were true I confess I should regard such a measure with quite as much disfavor as yourself; but this charge, though again and again repeated, is wholly without basis of fact. I have had some slight influence in suggesting amendments to this proposed law, and I know that whatever restrictions the bill originally contained, it now permits all phases of inoculation experiments, all tests of drugs, of poisons, or of methods of surgical procedure, and in fact all other useful investigations upon living animals, whenever such experiments may be performed while the creatures are anesthetized. (See Sec. 2, clause c.) Is this "abolition of experimentation?" THE NEWS has been misinformed.

2. You state that "the Humane Society of Washington is endeavoring to usurp to itself the power of controlling all animal experimentation" in Government laboratories and elsewhere. Upon what basis of fact does this statement rest? This Humane Society is not once mentioned in the bill, as reported for consideration; the President of the United States appoints the inspectors, and Government officers only have anything to do with experiments or experimenters. To suggest that above these officials, is the usurping power of the Washington Humane Society, is to confer a potency of influence where none exists.

3. I am heartily sorry to learn in the same editorial that the advocates of this bill are in favor of preventing the occurrence of "imaginary cruelties," for if abuses of

vivisection are unknown, all effort toward prevention is wasted force. But is it all imagination? In his address before the American Academy of Medicine last year, the late editor of THE MEDICAL NEWS—Dr. George M. Gould—said: "At present the greatest harm is done to true science by men who conduct experiments without preliminary knowledge to choose, without judgment to carry out, without true scientific training or method, and only in the interest of vanity. . . . I have adduced this single American experiment, but I purposely refrain from even mentioning the horrors of European laboratories. . . . Dr. Klein, a physiologist before the Royal Commission testified that he had 'no regard at all' for the sufferings of the animals he used. . . . It may be denied, but I am certain a few American experimenters feel the same way, and act in accordance with their feelings." Does Dr. Gould here refer to "imaginary" evils? I adduce his name only as a witness, not as an advocate, for if I mistake not, he is as strongly opposed to the bill as yourself. But no writer has more forcibly presented the evils to remedy which this bill was designed. I do not believe that, if it becomes a law, it will in the slightest degree impede any form or phase of useful investigation. In the first draft there were some features which have been entirely eliminated from the present measure, and it is to be regretted that this fact is so widely unknown, or so frequently overlooked.

ALBERT LEFFINGWELL, M.D.

BROOKLYN, JULY 7, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

"THE ÆSCULAPIAN ASSISTANCE AND INTERMENT COMPANY, LIMITED"—THE THOMAS HOGE MEMORIAL WARD OF THE PRESBYTERIAN HOSPITAL—FRESH-AIR PIERS FOR THE MASSES—DR. S. WIER MITCHELL'S RUMORED DEATH—FOURTH OF JULY CASUALTIES—VITAL STATISTICS.

PHILADELPHIA, July 10th, 1897.

THERE is a certain class of people in every community who, when they fall ill, or imagine themselves ill, repair to their favorite dispensary or hospital, and accept as a matter of course the free treatment given them; all sorts and conditions of men are included in this class, from the coal-heaver to the prosperous-looking individual whose personal appearance infers a lack of familiarity with the seamy side of life; but they are all alike in one thing—they pride themselves in getting something for nothing, and they get it unconditionally, and without embarrassing questions about their deservedness, thanks, very often, to the "charity" of some pseudo-philanthropist who has thought it beautiful and Christianlike to found a free dispensary for his fellow-men. Then there is another class of people whose motives are precisely the same as the former's, but who lack the assurance of the dispensary habitué, for they are conscious that they are not those for whom free dispensaries were intended, and they are afraid to pretend that they are; these people also are of a single mind about one thing—they pride themselves in getting something for as near nothing as possible, and they pro-

ceed to get it by patronizing twenty-five cent "specifics," or by taking the drug-store clerk's advice when they are ill, or by ingenuously asking their doctor friends leading questions about their maladies, hoping to elicit some counsel gratis.

For the latter class there exists a veritable god-send in the garb of a certain medico-commercial concern which may be termed "The Æsculapian Assistance and Interment Company, Limited." This enterprising corporation from all appearances finds a profitable field of labor in this city, if elaborate office suites in a prominent business section of the town, and large numbers of visitors to these offices are indications of prosperity. It agrees to furnish the sick or injured seeker for medical bargains, for the sum of twenty cents weekly, with the "best and promptest medical treatment in the city," or, should the patron not survive this excellent and prompt medical treatment, and pass to a world as yet uninvaded commercially by the company's agents, he or she is guaranteed the following gorgeous funeral arrangements, the contemplation of which, from the standpoint of this class of the community, must surely take away the sting of death: "Undertaker's services, including laying out, and advertising funeral notice in at least three daily papers, also one black-trimmed casket for an adult, or a white-covered coffin (if under thirteen years of age), the said casket or coffin to be satin-lined, with pillow to match, and to have from four to six nickel-plated handles, and a nickel-plate with name and date of death inscribed thereon; one plain box for casket, also one shroud of good cashmere, ice for preserving the body (not longer than four days), provisions for draping the room (candles, if wanted), the gloves and crape at the door, also furnish a grave, including and filling the same, in any cemetery in or about the city or town herein mentioned; also, a hearse, with five carriages, white marble tombstone if the party be over thirteen years of age when death occurs; a hearse with four horses, white marble tombstone, if the person is between six and thirteen years of age, and a hearse and three carriages and white marble tombstone if the person is between two and six years of age." In such a strain the prospectus of the company continues for several pages, at times lapsing into such enthusiasm that construction of sentences is sacrificed for vivid word pictures.

With such a *fin de siècle* institution within the reach of the "get-it-as-cheap-as-you-can" class, the question arises what will become of the quarter-dollar "specific" seller and the drug-store "doctor" who must decline to furnish tombstones and satin-lined caskets with their services? But the doctor friend escapes the innocent questions which he isn't supposed too see through, but which he does. All of which tends to add to one's belief in a certain ancient saw relating to the zephyrs of an evilly inclined wind.

Through the liberality of Mrs. Elizabeth Pleasanton, the Presbyterian Hospital will soon possess a handsome structure for the exclusive treatment of diseases of the nervous system. It will be known as the Thomas Hoge Memorial Ward, in memory of a relative of the donor. The new building will be four stories in height, and is to

occupy a prominent place in the hospital grounds adjoining the Administration Building. The first floor will contain thirteen apartments, one of which will be devoted to skiagraphy, and another to ophthalmologic work; the second floor is to be used for ward purposes, diet kitchens, electrical and hydrotherapeutic rooms; "rest" rooms and apartment for the surgeons occupy the third floor; while two operating-rooms, with adjoining apartments for sterilizers and surgical dressings, will be situated on the top floor.

It is expected that the new ward will be open for the reception of patients by next October. Dr. S. Wier Mitchell and a corps of assistants will have charge of the work of this new department of the hospital.

The establishment of "Fresh-Air Piers" along the river front is doing valuable service in improving the condition of the poor of the lower classes, and offering them an opportunity to escape for a time the reeking atmosphere of the alleys and courts, and the intolerable heat of the tenements. The woman of the tenement may bring her sick baby to one of these piers each night, and remain until the following morning; young and old alike are welcome to use these breathing spaces, and such adjuncts to comfort as easy seats, well-arranged lights, and covering overhead are provided. The piers, which are similar to those along the New York water front, are under the care of the Health Protective League, of which Dr. Rachael D. Skidelsky is the president; they are open every week day from 7 P.M. to 7 A.M., and all day Sunday. It is hoped that the establishment of such breathing spots for the masses will result in the alleviation of much suffering, and in a reduction of the high infant mortality among this class of the population.

A rumor reached this city the early part of the week alleging the death in London of Dr. S. Wier Mitchell. Fortunately, upon careful inquiry, the report could be stamped as a senseless canard, due most likely to some news-ridden journalist's elastic imagination.

As a result of the celebration of the Fourth of July, the various hospitals of this city treated 120 accident cases attributable to the use of fireworks, one of which proved fatal. "Heat" cases numbered twenty-one, the majority of which occurred among the celebrants, so that it may be said that the cost of this patriotic remembrance of our country's decision to strike out for herself resulted in a total of 141 casualties.

There were thirty deaths from diphtheria, and fifteen from scarlet fever last month at the municipal hospitals; 116 cases of the former disease having been admitted, and 145 of the latter.

Post-graduate Facilities in Russia.—There are facilities for post-graduate study at the ten Russian Universities and at the Army Medical Academy at St. Petersburg. Courses on various special subjects, varying from one to three months, are held, and the fee charged is a small one, averaging about \$2.50. There are abundant opportunities for graduates desiring to do original scientific work in the laboratories of the universities and hospitals.

OUR VIENNA LETTER.

[From our Special Correspondent.]

PASTOR KNEIPP'S METHODS, PATHOLOGY, AND THERAPEUTICS, AND THE LESSONS SUGGESTED BY HIS SUCCESS—PROFESSOR PALTAUF AND THE INEFFECTUOUSNESS OF PLAGUE SERUM—LUMBAR PUNCTURE IN THE DIAGNOSIS OF MENINGITIS AND ALLIED CONDITIONS IN CHILDREN.

VIENNA, June 25, 1897.

THE Vienna papers recently have contained daily bulletins on the condition of Pastor Kneipp's health, and the announcement of his death, which has just occurred, occasioned deep regret. There is scarcely a medical man in Europe in whose condition so much general interest would have been displayed. It was in a medical way that Kneipp gained celebrity, yet modern medicine owes him very little, if anything at all. Some time when another Oliver Wendell Holmes writes on the vagaries of therapeutics in our nineteenth century, Pastor Kneipp and his "water cure" will occupy as prominent and as inexplicable a place as the "unguentum armamentarium" of Sir Kenelm Digby, or Bishop Berkley's tar water in other times. More people have gone to Wörlshofen during the last ten years to consult the simple, well-meaning country clergyman about their health than would suffice to keep at least half a hundred doctors busy all the time. Some years ago 20,000 was set down as a conservative estimate of the number of annual medical pilgrims to this modern shrine. In the course of time the number has increased, not diminished. People came from all parts of the world. Australians, Americans, East Indians, as well as Europeans, have come to Vienna every now and then to consult some distinguished regular physician before going to Wörlshofen for Pastor Kneipp's "cure." These are the ones who somehow have felt the absurdity of what they were doing, and yet, spurred on by hope and the example of others have continued their journey after satisfying the last qualms of common sense by a final medical consultation.

The little town of Wörlshofen has more than doubled in size, and, without any special natural advantages, has become one of the most popular health resorts in Europe. People of all classes have flocked to it, and members of reigning royal families have been glad to become Pastor Kneipp's patients. The Empress of Austria obediently took her daily sprinklings and baths and her daily walk barefoot in the grass at his direction. He was summoned some time ago to prescribe for the Pope, and a distinguished member of the Rothschild family went to Wörlshofen in his private car to consult him, and used it as a hotel during his stay, because the inns were not good enough for him. He, too, had to go barefoot in the dewy grass in the early morning; but this is not even considered an eccentricity in Wörlshofen, as half the world there has been doing it uncomplainingly for years. And the secret of it all is the wonderful influence of mind over body, and the fact that change of scene and mode of life will cure half the chronic ills that flesh is heir to. Pastor Kneipp's book, "My Water Cure," of which some sixty editions have been exhausted in less than ten years, besides a num-

ber of editions in most European languages, gives all the details of his system. Its pathology is of the simplest, crudest kind, a bit of the old humoral theory serving to explain the etiology of practically every ill. All disease is due to impure blood and corrupt tissue humors. All disease, even organic heart and nervous lesions, disappear when the blood and humors have been properly cleansed. Blood purification was the motto of the empirics before Hippocrates' time. It has always been the slogan of the charlatan, and it is the supposed secret of the success of the harmless, wonder-working sarsaparillas and a hundred other panaceas of our own day. Not that Pastor Kneipp is to be classed with the crowd of humbugs who are in the medicine business for revenue only, and who everywhere are allowed to continue the humbugging of a readily deluded public. He was without doubt a sincere believer in himself and his theories, however absurd they may seem. Nothing is clearer proof that psychical conditions are contagious quite as much as physical affections than to see how ideas utterly unreasonable may be generally accepted when urged with straightforward simplicity and the ardor of conviction.

And so a book which has for its groundwork the popular fallacies of times long past and the simple remedies of the grandmothers of generations ago, instead of being considered as the idle fancy of a self-sufficient, but ignorant, country clergyman, has been taken seriously in our day of vaunted popular education. The exposé of his system by himself serves as a great advertisement. His cases included the cure of cancer, when taken in time, by cold douches and baths, and of organic heart disease, children's paralysis, and epilepsy by the same means. Pneumonia he *cured* in three to five or, at most, seven to nine days by the application of a poultice of coagulated milk. He was certainly not the first to cure pneumonia by simple means in such a short time, but when the coagulated milk poultice is said to *cure* pleurisy, peritonitis, and pelvic inflammation, then there is cause for wonder. Old popular ideas in medicine are played on with great effect, and hygienic formulas that were supposed to have a meaning years ago are once more put forward for the solution of intricate medical questions.

A tendency to relapse of any affection was overcome by "hardening the system," whatever that may mean, the method employed being that of cold baths, douches, and walking barefoot in wet grass, preferably in the early morning. The old doctrine of the striking in of secretions and eruptions, and the consequent danger to the system, was insisted on, and the increase of "transpiration," a mysterious process which is brought about by the plentiful use of cold water externally, which removes "noxious humors" from the blood, and so cures all ordinary human ills, was the main indication of his therapeutics. Beyond cold water, the infusion of hay flowers, also for internal use, was highly recommended.

There would seem to be a lesson or two in these days of nihilistic therapeutics and over-specialized medicine in Pastor Kneipp's wonderful popular success, for his name has become a household word all over Europe without any of the advertising methods that betoken the mere

charlatan. One cannot help thinking that perhaps, too much attention is being paid by the practising physician to the more scientific branches of his profession, to the neglect of therapeutics, because the latter is empirical and unsettled, it being forgotten that, after all, the application of therapeutics constitutes his only real *raison d'être*. On the other hand, an overestimated specialism devotes itself too much to the organs it is particularly interested in, and forgets that it is often improvement in the general health which will best restore these organs to their proper functions. A hundred years ago, homeopathy owed its successful introduction to an analogous error in another direction. Will the lesson of the success of the irregulars be lost in this generation?

At the recent meeting of the Imperial Vienna Medical Society, at which the report of the Austro-Indian Pest Commission was discussed, Professor Paltauf mentioned some attempts which had been made to immunize dogs with pest serum. Though carefully done, the animals invariably died of marasmus. As a result of his experiments, Paltauf agrees with the unfavorable observations of the Commission on Yersin's serum. He is inclined to think that the serum-therapy of the disease is extremely improbable.

A series of eighty cases of meningitis, in which lumbar puncture was done for diagnostic purposes, has just been reported (*Wiener klinische Wochenschrift*) from Professor Widerhofer's clinic. In sixty-two of the cases there was question of tuberculous meningitis. In nearly all of the cases the bacilli, though sometimes in small numbers, could be demonstrated. When the symptom complex of tuberculous meningitis was present, and microscopic analysis of the cerebrospinal fluid negative, its cloudiness and the increased pressure were of diagnostic importance. The limits of the normal physiologic pressure of the cerebrospinal fluid are, unfortunately, too little known to allow of the formulation of rules which can be followed with assurance. Inoculation experiments, when bacilli were not found in suspicious cases, almost invariably confirmed the clinical conclusions.

As to the important matter of the differentiation of other forms of meningitis, so important as regards duration and the absolute prognosis, lumbar puncture was especially useful. The streptococcus and the Weichselbaum-Fränkel diplococcus could always be found in their specific meningitides, while hemorrhagic fluid seemed pathognomonic of epidemic cerebrospinal meningitis. The value of the procedure, too, in differentiating conditions which simulate meningitis from the basal pressure symptoms they produce, as tumors, etc., was worthy of special note. In seven cases it absolutely established the diagnosis of the absence of meningitis. In but one or two of the cases did the puncture produce any serious symptoms. It was always done without an anesthetic, the condition of hebetude usually present being enough to guarantee against sudden movements on the part of the patient that might have proved seriously inconvenient. In children, the point of puncture recommended is between the second and third lumbar vertebrae, not between the first and second, as in adults, in whom the cord is longer.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

TWO CASES OF "DERMATITIS MALIGNA"—NON-PERFORATING RUPTURE OF THE HEART—THE COMMONER FORMS OF HEADACHE AND THEIR RELATION TO ARTERIAL TENSION—CHRONIC HYDROCEPHALUS—THE AMOUNT OF ANASTOMOSIS IN THE MESENTERIC VESSELS—THE RECOGNITION DURING LIFE OF ADHERENT PERICARDITIS—MYOMA OF THE VERMIFORM APPENDIX—A WHOLE PENCIL OF NITRATE OF SILVER SWALLOWED, AND RECOVERED FROM.

AT the session of the Pathological Society, held May 4th, ROLLESTON and HUNT showed *two cases of "dermatitis maligna,"* in both of which carcinoma subsequently developed. One was that of a man aged sixty, in whom a characteristic raw, glazed, vividly red condition of the skin had existed above the pubes for eight years. Two years ago three nodules of carcinoma developed. Removal of the whole growth has not been followed by recurrence. The sweat glands were dilated, but did not appear to be undergoing any carcinomatous change. The carcinoma was a spheroidal-celled one arising, in the opinion of the reporters, from the sebaceous glands.

The second case was in a woman forty-five years old. In this instance the skin affection began in the sinus of a mammary abscess, eight years previously. It spread widely, and a year ago a cancerous nodule was observed. At operation the whole affected area, together with the glands of the axilla, were removed. There has been no recurrence. This carcinoma was a squamous celled one, showing a transition to the spheroidal-celled type. Neither the mammary gland nor its ducts was in any way involved, and it ought, therefore, not to be called Paget's disease, that name properly being reserved for a long-standing dermatitis of the nipple, as originally described by Paget.

THIN saw in the first of these two cases one of the more ordinary forms of epithelioma; the small cell infiltration of the papillary layer was well-marked, and in this respect differed from the ordinary forms of epithelioma. Hence, the value of the term "papillary malignant dermatitis." He doubted if the sebaceous glands were ever the source of carcinoma, including in this statement "rodent ulcer."

SPENCER thought the term "malignant dermatitis" ambiguous and obscure, for the dermatitis is only antecedent to the malignancy, and the word malignant does not of necessity convey the meaning of a new growth, but may refer to the inflammatory process itself.

FOX exhibited an instance of a non-perforating rupture of the heart, occurring in a stout woman of good health and active habits, who was seized with precordial pain after a cold bath. Morphine, hypodermatically, and a small venesection, gave some relief. Death followed after forty-eight hours. The pericardium was found to be full of blood. The heart was very fat, and there were two small rents in the walls of the left ventricle which did not perforate. It appeared that the distension of the fatty

heart had ruptured the exocardium at these points, causing a slow leakage of blood, which produced death in two days.

At the session of the Hunterian Society, held April 28th, FOX described *some of the commoner forms of headache, with especial relation to arterial tension*. The determination of the tension present rests partly on the sustained character of the pulse, and partly on the accentuation of the second sound of the heart, as heard over the aorta and in the neck. The typical headache due to anemia is frontal and throbbing, similar to that caused by constipation. In albuminuria the pain is usually in the top of the head, and is not relieved by lying down. These forms of headache are all attended by increased tension, and this is true of the majority of cases of migraine. Besides the all-important constitutional treatment, cannabis indica is the most useful remedy in these cases, and may be pushed to intoxication without fear. The fresh extract is the most reliable form of this drug. For headaches, associated with low tension, including those due to tachycardia, alcohol, cough, and amenorrhea, caffeine is the remedy *par excellent*. In middle life, heart disorders cause headaches, with increased tension, perhaps, in the earlier stages, but diminished tension in the later ones. In the old, the steady increase in blood pressure, the senile heart and the asthenic dilated heart, bring their own head discomforts. In the *plus* tension of old age, the saline aperients are often of great value.

Before the Clinical Society, at the meeting held May 14th, TAYLOR read a paper on *chronic hydrocephalus*, and reported a case which ended fatally at the age of sixteen years. The patient had in infancy a large head, but grew up strong and well, attended school, and learned to play the violin. Later he learned typesetting, at which he was employed until he was taken with his last illness. This began with headache and vomiting, followed by dizziness. In the hospital his head was found to measure twenty-three inches in circumference. A few days later the head was retracted and paralysis set in, extending from the feet upward. He died with paralysis of the diaphragm seventeen days after the sickness began.

The autopsy showed the bones of the skull to be much thinned and the ventricles to contain about thirty ounces of fluid. The retention of the mental powers in this case until such a late period of life is very unusual.

LOCKWOOD related a case which throws light on the *amount of anastomosis in the mesenteric vessels*. A man aged sixty-four attempted suicide by stabbing, using a carving knife. The wounds inflicted were all in the mesentery. One of them was parallel to the bowel, and only half an inch removed from it, and had divided an artery of considerable size. The several mesenteric wounds were sewed up, including the one described, as it was only three-quarters of an inch long, and it was not thought that it would deprive the bowel of any considerable supply of blood. The bowel itself was not injured. The man died after two days, and it was found that the intestine opposite the rent referred to was almost gangrenous. A careful examination of other mesenteries re-

vealed the fact that there are no loops of anastomosis within half an inch of the bowel, and that therefore, in the case in hand, the bowel should have been resected.

MARSH mentioned the case of a man thrown from his horse while hunting, and striking upon a heap of stones. There were no immediate symptoms, and he went to his business on the following day. He then rather suddenly collapsed and died. The intestine was gangrenous for several feet, owing to a rent in the mesentery which had severed a large branch of the superior mesenteric artery without, however, giving rise to any great hemorrhage.

TAYLOR called attention to the fatal cases reported as being due to thrombosis of a branch of the mesenteric artery, producing death of the gut. Such cases show that the anastomosis of the mesenteric vessels is not to be relied upon.

At the meeting of the Leeds and West-Riding Medico-Chirurgical Society, held April 9th, CHURTON showed a *heart with an adherent pericardium, the diagnosis of this condition having been made during life*. Old adhesions existed between the lower part of the left ventricle and the pericardium, and in consequence the eleventh rib was distinctly drawn in at each systole. This sign, which is known by the name of Broadbent, was observed a few days before death. How long it had existed there was no means of determining.

CHURTON also showed a *myoma of the vermiform appendix*, simulating recurrent appendicitis. It was a sessile tumor, the size of a small bean, and situated about three-quarters of an inch from the distal end of the appendix, occluding the lumen at this point. Its presence was not detected until the appendix had been removed and cut open. There were no peritonitic adhesions or other evidence of inflammatory action.

DRURY described *his own experience with a large dose of nitrate of silver*. A year ago, after a week's illness, it was decided to make an application of nitrate of silver to his throat. In the attempt to do this the whole pencil (twenty-five grains) slipped down the esophagus. His feelings were indescribable. There was intense gastric pain, and a sensation as of impending death. From the mouth and nose a froth welled up, due, no doubt, to the decomposition of the silver salt and liberation of hydrogen by the hydrochloric acid in the stomach. There was an irresistible feeling that the pencil was still lying in the esophagus. This was so horrible to contemplate that he insisted, against all advice, on the passage of a probang, which failed to bring out anything. Mustard was given in large quantities and free vomiting induced. No trace of the salt was to be seen in the vomited matter. Collapse and great exhaustion followed, and he was kept for some days on a milk diet. There was no further vomiting, but constipation. The temperature for some days was subnormal, but all these symptoms gradually disappeared. During the fortnight following the accident there was complete desquamation of the whole skin, and during the subsequent year there was more or less dyspepsia, but there had been a certain amount of this trouble before the accident.

Berlin.

SARCOMA OF THE LIVER AND KIDNEY WITH TUBERCULOSIS OF THE LUNG—TUMOR OF THE BRAIN WITH UNUSUAL LACK OF SYMPTOMS—THE CARE OF INFANTS IN HOSPITALS AND ASYLUMS.

At the session of the Medical Society, held May 5th, BAGINSKY presented the organs of a child aged eighteen months, in whom the right side of the abdomen was markedly distended, especially well up toward the hypochondrium. Here could be felt a soft, well-nigh fluctuating mass occupying especially the region of the liver, extending downward to the umbilical line, and backward into the lumbar region. Nowhere in these areas was there any tympanitic resonance. The urine was almost normal, containing no renal elements but a trace of albumin. The child had a fever, and as it was considered probable that there was a large abscess present a needle was thrust into the swelling, but only a few degenerated cells were obtained. An exploratory incision was then made, which revealed a dark-brown, soft mass—probably a tumor growing from both the liver and the kidney. This supposition was confirmed at the autopsy which followed the operation by a short interval. The kidney itself was almost intact but completely surrounded by the tumor, which apparently sprung from its hilus. The growth had pushed forward under the liver, involving this organ, while in the lung and bronchial glands were masses which were at first regarded as metastases, but which the microscopic examination showed to be typical of tuberculosis. The tumor was a spindle-celled sarcoma. A combination of sarcoma and tuberculosis has been reported before, though it is by no means a common occurrence.

A second case of sarcoma was reported by BAGINSKY, this tumor being found in a child 6½ years of age. At autopsy it was found that a myxo-angio-sarcoma of great size had surrounded the corpus striatum and optic thalamus of the right side, extending into the lateral ventricle and reaching also to the left side, where it at least pressed on the corpus striatum. The remarkable fact in the case was that in spite of the situation of the tumor and its great size, none of the symptoms were present which are ascribed to tumors situated in the corpus striatum and extending to the optic thalamus. The symptoms were only those of a large brain tumor, and especially there was no paralysis, which is said to be present in tumors of the corpus striatum.

HUEBNER thought that the absence of paralysis was due to the fact that the tumor chiefly affected the gyrus fornicatus, which does not belong to the motor portions of the brain.

A paper upon infants and infant hospitals was read by HUEBNER. The writer expressed his regret that the infant mortality remained so high, and gave rules for cleanliness to be observed in the artificial feeding of infants. The various food mixtures were also spoken of. The treatment of these young infants in hospitals ought to be carried out in accordance with the following rules:

1. On account of the great difficulties which are connected with bottle-feeding, every mother physically capa-

ble of nursing her child should be obliged to do so. That this can be done at no great expense is seen in the "Kaiserliche Kinderheim" in Gräbschen, near Breslau.

2. Bottle-fed children should be separated from the others, and not more than four should be placed in one room. Very sick children should be treated in single rooms.

3. The percentage of nurses to patients needs to be considerably greater than in adult hospitals. Three day nurses (two for feeding and one for the care of the "lower half" of the children), with two night nurses, that is five in all, may be regarded as the maximum number for eight infants.

4. An infant's hospital should be kept as such, and should not be allowed to serve as well the purposes of an orphan asylum. The length of time which it is necessary for a baby to remain in the hospital can only be determined in each individual case.

5. The expense of such an institution will naturally be high, but in the light of our present experience there will be a mortality far below that obtainable in the old institutions where careless methods have usually prevailed.

NEUMANN thought that the great expense of caring for children in the thorough manner described would be in part avoided by the provision of sufficient asylums to receive the children which are no longer in need of hospital care. In Berlin, at least, such institutions are lacking, and, as a result, the children have to be kept in child and adult hospitals.

SOCIETY PROCEEDINGS.

NATIONAL CONFEDERATION OF MEDICAL EXAMINING BOARDS.

Seventh Annual Meeting, Held at Philadelphia, May 31, 1897.

The Chairman, DR. W. W. POTTER of Buffalo, read his annual address, taking as his subject

RECIPROCITY IN MEDICAL LICENSURE; A PLEA FOR INTERSTATE INDORSEMENT.

In this he expressed himself as thinking that the remedy for the prevailing evils lies in legislative enactments secured by the demands of an enlightened public opinion. Twenty-seven States, he said, now require separate examinations, and fifteen of them demand diplomas from recognized colleges when the candidate presents himself before the board. The value of the same law in all the States was dwelt upon and a review made of the different laws in the different States. During the past academic year he reported the establishment of new examining boards in the District of Columbia, Indiana, Idaho, and New Hampshire, showing that advancement was being made in State control. In closing, he stated that the confederation favored reciprocity in securing proper general laws in all the States.

A resolution authorizing the appointment of committees to make thorough investigation of the different medical schools throughout the country, so as to distinguish the good from the bad, was referred to the Executive Com-

mittee to report on at the next meeting. The question providing ways and means of securing reciprocity among the States, was referred to the Executive Council.

The report of a special committee appointed at the previous meeting was then heard. The committee concluded by making the following recommendations:

"That, as far as may be vested in the discretion of existing examining and licensing boards, the rule be enforced that any college, to be in good standing, must enforce entrance requirements, embracing the studies of grammar, geography, two years of Latin, arithmetic, algebra (through quadratics), plain or solid geometry, physics, rhetoric, United States history, and one modern language other than English, or a high-school diploma issued after four-years' attendance, and based upon examination in the foregoing subjects."

It also recommended that the Medical College Association amend its constitution by advancing the requirements for admission, so as to include all of the above subjects.

DR. EUGENE BEACH of New York presented a resolution providing that when, for any reason, a license to practice medicine in any State has been revoked or suspended, the proper officers of boards of examiners in other States should be notified of the facts. It was adopted unanimously.

Dr. Potter was re-elected President, and Dr. A. Walter Suiter of Herkimer, N. Y., was re-elected Secretary and Treasurer. The new Vice-Presidents are Drs. L. B. Godfrey of New Jersey and William Bailey of Kentucky.

THE AMERICAN ACADEMY OF MEDICINE.

The regular annual meeting of this important body was held in Philadelphia on May 31, 1897. During the morning session, much of which was devoted to executive business, the following officers were elected and the names of many new members were added to the roll: President, Dr. L. Duncan Bulkley of New York; Vice-Presidents, Dr. John B. Roberts, Philadelphia, Dr. V. Y. Bowditch, Boston, Dr. Charles Dennison, Denver, Dr. F. T. Rogers, Providence; Secretary and Treasurer, Charles McIntire, Easton, Pa.; Assistant Secretary, Walter L. Pyle, Philadelphia.

DR. J. W. GROSVENOR of Buffalo presented an exhaustive paper upon

THE RELATION OF ALCOHOL TO PREVENTIVE MEDICINE.

In this he dwelt upon the influence of alcohol and drunkenness in the production of idiots, lunatics, epileptics and criminals, and by statistics was able to trace a very large percentage of accidents, including suicides, to the same cause. He concluded that if a board of health for the safety of the community can rightly kill the butchers' diseased cattle, on what ground can it be forbidden to destroy the saloon-keepers' poison liquor? It may be objected that such an act would be an infringement of personal liberty, but it is not so. All right methods should be used for elevating to a higher plane man's physical, mental, and moral nature, and to accomplish this noble object due recognition should be given to the part played by alcohol as an antagonist of preventive medicine.

Other papers were presented, with more or less discussion, upon

THE TRUTH ABOUT CALOMEL—THE GREAT PHYSICIAN OF THE REVOLUTION—WHERE SHALL WE PUT UP THE BARS—A PLEA FOR PRELIMINARY EDUCATION—MEDICAL EDUCATION.

A special discussion of

THE RELATION OF THE COLLEGE TO THE MEDICAL SCHOOL

had been arranged and views of three gentlemen who were solicited to speak upon this topic proved exceedingly interesting. DR. BAYARD HOLMES of Chicago spoke as Secretary of the Association of American Colleges; ATHELBERT D. WARFIELD, L.L.D., as President of Lafayette College, and DR. WILLIAM PEPPER as ex-Provost of the University of Pennsylvania,

Dr. Holmes presented certain demands which were made in behalf of the Medical School. Among these demands was one that due credit should be given the Medical School's courses; another, that it should not be made a "hired man" for the service of the University. In certain State schools he knew of, the speaker said, the medical school earns money for the other departments of the University, maintaining expensive chairs there. He complained, too, that the professors of literary institutes assume a lofty superiority toward medical colleges and frequently strive to dissuade young men from attending medical lectures. Another complaint was that students frequently are not given credit in their bachelor's degree for allied or special work done in some medical subject.

Dr. Warfield contended that mental discipline and culture, to be obtained at college, should be prerequisites for a medical man, and he was of the belief that medical schools which desire the attendance of college-bred men must raise the standard of admission. Colleges can relieve the medical schools of some of the elementary work in chemistry, biology, etc., and this preliminary instruction is better given by a teacher who devotes his entire time to the one branch, as in a college, than to the busy practitioner who snatches a few hours from his practice to lecture to large classes in the medical school. A new difficulty in a general education, he thought, was the "short-cut" method of special courses.

Dr. Pepper deplored the ruinous loss of time, and the consequent insufficient mental training, due to the turning from one curriculum to another, and declared that, above everything else, co-ordination of studies, from the kindergarten to the professional school, were absolutely necessary. However, the co-ordination which will make this possible will never come to pass until teachers meet, and, expressing confidence in each other's work, strive to attain the best end.

DR. J. MCFADDEN GASTON of Atlanta thought a year or so spent under the guidance of a preceptor before entering upon the final study for admission to the profession had great advantages.

DR. A. M. TALLEY of Columbus, S. C., regarded the requirement from students of a preliminary classical education important in maintaining the name of medicine among the learned professions.

DR. HENRY M. HURD of Baltimore was of the opinion that it was impossible for the student in many instances to select his profession early enough to shape his preliminary course toward the desired end.

GERMAN SURGICAL SOCIETY.

Meeting Held at Langenbeck Haus, Berlin, April 21 to 24, 1897.

[From our Special Correspondent.]

(Continued from page 31.)

THIRD DAY—APRIL 23D.

The President, PROFESSOR BRUNS of Tübingen, in the Chair.

The proceedings were opened by the reading of a paper, entitled

THE OPERATIVE TREATMENT OF HYPERTROPHY OF THE PROSTATE,

by PROFESSOR HELFERICH of Greifswald. He sketched the history of the operation of castration for this condition, and quoted a number of statistics relating to its successful employment. Personally, his experience had been that resection of the vas deferens is equally effective in the majority of cases in which operation is indicated. The prostate should always be examined carefully both before and after operative measures have been instituted, rectally and by means of the cystoscope. He had noticed that, although micturition or catheterization is more easily accomplished after such an operation has been performed, psychic disturbances, often of a marked character, are present in most cases.

The speaker referred in favorable terms to the use of Bottini's galvanocautery in cases of prostatic enlargement, and said that the very slight constitutional derangement following its employment was a point largely in its favor. Regarding the ligation of the internal iliac artery, he said that several remarkable cures had been reported, and that this method of procedure was to be recommended in severe cases. Suprapubic cystotomy may be indicated under certain conditions, but is merely a palliative measure.

During the discussion which followed, DR. MIKULICZ reported 50 castrations, in which 29 resulted in a reduction in size of the prostate, 9 in death, 1 in acute mania, and in the balance, no improvement. Of 45 cases of resection of the vas deferens, 10 resulted in a diminution in size of the gland, 27 in improvement of symptoms, and in 8, no improvement. Of the latter, 3 patients were unimproved after a subsequent castration.

DR. BIER of Kiel said that good results have been obtained from ligation of the internal iliac artery for this condition, but on account of the difficulty of the operation it is not to be recommended, except in selected cases. He had lost one patient from septic peritonitis, upon whom he had operated in this way, and two from pneumonia.

DR. MÜLLER of Aachen then showed a patient who had had a defect of the tibia covered by an osteoplastic flap from the fibula. The flap had nearly doubled in size since the operation.

DR. EISELSBURG of Königsberg reported two similar cases, one of sarcoma, the patient later dying from recurrence, and the other that of a child with a compound fracture. In each instance the flap included skin, periosteum, and bone, and became firmly attached.

PROFESSOR KÖNIG of Berlin showed a girl, seven years of age, in whom laryngotomy had been performed in 1892 after intubation for diphtheria had been tried and proved useless. The child had been wearing a long tracheal tube, and attempts to remove it had always resulted in severe attacks of dyspnea. In order to remedy the existing defect, four separate operations had been resorted to. Granulation tissue was first removed from between the larynx and trachea, and the trachea was freed from its attachments behind the sternum and brought up and sewed to the larynx. Two months later, at the time of the second operation, the two portions of the tube had again become widely separated; these were brought together as before, the canula being allowed to remain in place. Subsequently, two additional operations were performed in order to close the opening, skin and bone flaps in the first instance being taken from the sternum, and in the second, from the clavicle.

A son of Dr. König reported five cases of defect resulting from tracheotomy and laryngotomy, in two of which the opening had been closed by means of a skin and cartilage flap from the thyroid cartilage.

PERMANENT CURE AFTER EXTIRPATION OF THE LARYNX—

was the title of a paper by DR. GRAF of Berlin. He reported 47 cases of carcinoma of the larynx and 1 of malignant endochondroma operated upon by Von Bergmann. In all of these cases the diagnosis was confirmed by the microscope. Twenty-eight of the operations included total extirpation of the larynx, 11 extirpation of one side only, and 9 of partial extirpation. Of these, 42 were males and 6 females, the age of the patients ranging from thirty-one to seventy-two years. Tracheotomy was performed as a preliminary measure in all cases, and great stress was laid upon the importance of closing the wound from the pharynx and trachea.

Of the cases of total extirpation, 1 patient remains well after a lapse of seven years, 1 after two and three-fourths years, and 1 after one year. Cures have resulted also in 4 cases of one-sided and in 4 cases of partial extirpation.

DR. HEUSNER of Bremen exhibited a number of cases of fracture of the patella in which excellent results had been obtained by means of subcutaneous silver-wire sutures passed through the ligamentum patellæ and the tendon of the quadriceps extensor.

During the discussion which followed, KÖNIG said that the irregular fractures of the patella are unsuited to this method of treatment. He believes that the large amount of callus resulting from the procedure seriously disturbs the function of the joint. It is his own practice to cut down on the fracture and to sew the fragments together by means of catgut sutures.

ANATOMIC AND CLINICAL CONTRIBUTIONS TO THE KNOWLEDGE OF AND OPERATIONS FOR CANCER OF THE PHARYNX

was the title of a paper by DR. KRÖNLEIN of Zürich. From his own experience, the speaker had arrived at the conclusion that cancer of the pharynx is much less rare than generally has been supposed, and that it is met with as frequently as malignant disease of the tongue. He had had sixty-one cases of the affection under his charge, fifty-six being in the male sex, and all were of the flat epithelial variety. The disease, as met with in the pharynx, is usually unilateral and its course extremely rapid.

The operation for relief of the condition is performed after resection of the inferior maxilla after the method of Langenbeck. Of the fifteen patients operated upon by the speaker, ten had died from recurrence after an average lapse of fifteen months from the initial appearance of the disease, one had developed cancer upon the side opposite to that operated upon, after a freedom of seven months; three are living, the growth not having returned; and one is living, with a recurrence. Of eight patients suffering from the laryngeal form of the disease, who were operated upon through a subhyoid incision along the edge of the sternomastoid muscle, six died as a result of the operation, in one the condition has recurred, and one is living, and is well.

Following the discussion of this paper, DR. FRANKE of Braunschweig showed a patient in whom transplantation of a tendon for paralytic club-foot had successfully been performed.

DR. JORDAN of Heidelberg then read a paper on
LUPUS OF THE HAND AND LYMPHANGITIS TUBERCULOSA,

in which he stated that, as but thirteen cases of this affection have been reported, it is consequently rare. Two of these have occurred in the persons of cigarmakers, and it, therefore, is probable that local infection plays an important rôle in its causation.

FOURTH DAY—APRIL 24TH.

The proceedings were opened by the presentation of a paper by DR. PARTSCH of Breslau on

THE REPARATION OF THE INFERIOR MAXILLA AFTER RESECTION.

The speaker's method consists in the boring of two holes in the jaw, one on each side of the portion to be resected, prior to the resection, and the fastening of an aluminum plate to the jaw by means of these openings after the section has been removed. This plate does not hinder the process of healing, and when this has become complete an interdental splint of the same material is applied.

RESTORATION OF THE FUNCTION OF THE SPHINCTER ANI MUSCLE ACCORDING TO GERSUNY'S METHOD

was the title of a paper by DR. PRUTZ of Königsberg. After removal of the coccyx and a portion of the sacrum, the gut is pulled downward for a distance of about two centimeters and then twisted until the opening is closed.

It is then fastened in place by two rows of sutures. In eight cases in which this operation was performed the results, upon the whole, were good.

THE LYMPH VESSELS OF THE TONGUE, AND THEIR RELATION TO THE SPREAD OF TONGUE CANCER

was the title of the next paper, which was read by DR. KUTTNER of Tübingen. He pointed out the fact that the course of the lymphatics of the tongue is toward the submaxillary glands, toward the deep cervical glands which lie directly on the jugular vein, and also toward the glands which are located deep under the sternum. From the posterior region of the tongue the channels lead to the chain of glands lying along the course of the carotids. In cases of malignant disease of the tongue, in which removal is attempted, it is therefore extremely important to remove the submaxillary and deep cervical glands in order to prevent a possibility of recurrence. The speaker referred to the excellent work which has been done in the study of these conditions by Dr. Gerota, in Waldeyer's laboratory.

DR. GURLT of Berlin then read a paper on
STATISTICS OF ANESTHESIA.

He said that from the beginning of the year 1895 up to the present time he had been able to collect reports of 52,804 cases in which an anesthetic had been administered. Of this number 27,025 patients had been given chloroform, resulting in twenty-nine deaths, 19,856 ether, with three deaths, 4927 ether and chloroform mixed, no deaths, and 996 Billroth's mixture, no deaths.

EXARTICULATION AT THE SACRO-ILIAC JOINT

was the title of a paper by Dr. BARDENHAUER of Cologne. He reported the case of a female, forty-six years of age, suffering from coxitis and psoas abscess. The iliac artery first was tied, and the os pubes freed and sawed through. The sacro-iliac joint was then dislocated and separated. The wound was closed by means of large skin flaps. The patient made a good recovery and was able to leave her bed in eight weeks. A small fistula remains. An artificial limb has been fitted and the woman moves about on crutches.

PROFESSOR TRENDELENBURG of Leipzig, by a large majority, was elected president for the ensuing year, after which the Society adjourned.

HARVARD MEDICAL SOCIETY.

Stated Meeting, Held Saturday, April 24, 1897.

THE President, JOHN WINTERS BRANNAN, M.D., in the Chair.

DR. RICHARD FROTHINGHAM presented a case of patent foramen ovale. The patient was a male, eighteen years of age, who was markedly cyanosed. He was not a blue baby at birth, but developed this condition after sustaining a fall when he was between four and five years old. The history was somewhat obscure, but the speaker thought the condition was due to a congenital lesion. The boy was not well developed; his head was small, and he was dull and stupid. A systolic murmur was heard over the base of the heart and extending to the left of the

sternum. There was no history of rheumatism. The fingers and toes were black and presented the typical clubbed appearance. The tongue also was black. He complained of dyspnea on going up stairs and on any unusual exertion, but felt well in all other respects.

DR. DILLON BROWN read a paper, entitled
THE USE OF ANTITOXIN IN THE TREATMENT OF
LARYNGEAL DIPHTHERIA.

The author said that for therapeutic purposes diphtheria may be divided into two types: laryngeal and nasopharyngeal. In the first the danger is from asphyxia caused by obstruction of the larynx or by extension of the membranous inflammation to the smaller bronchi, while in the latter a fatal termination is almost invariably due to absorption of poisons through the lymph and blood supply. Again, in laryngeal cases the disease is rarely the result of a mixed infection, whereas nasopharyngeal diphtheria, as it is seen in practice and not in the laboratory, is frequently due to a mixed infection. The importance of this from a therapeutic point of view is evident when the difference between infection by the Klebs-Loeffler bacillus and by the streptococcus is considered. In streptococcus infection, the germ itself finds its way into the blood and viscera, but this is seldom true of the bacillus in Klebs-Loeffler infection. In one case there is only a toxin to contend with; in the other there is both the germ and its toxin. There are many unsolved problems in connection with the antitoxin treatment of nasopharyngeal diphtheria, but there can be no doubt of its almost specific value in the laryngeal form of the disease. In proof of this position, the reader gave an analysis of 991 cases of laryngeal diphtheria seen by him during the past twelve years. With but few exceptions the patients had been seen in consultation with other physicians. During the years between 1885 and 1890, 442 patients were intubated, of whom 27.3 per cent. recovered. From 1890 to September, 1894, calomel fumigation was employed, and of 295 cases operated upon, 41.6 per cent. recovered. In September, 1894, the antitoxin period began, and of 59 patients intubated since that time, 67.8 per cent. recovered. The analysis showed marked improvement after calomel fumigations were used, and the still greater success after the introduction of the antitoxin treatment. The benefit is seen not only in the larger number of recoveries after operation, but also in the increased percentage of patients who recovered without an operation.

DR. J. G. PERRY thought the paper an admirable one, because it gave a standard by which to go. The methods of preparing the antitoxin are improving every day, and we are also learning better how to use it.

THE PRESIDENT said that his experience with diphtheria had been mainly confined to hospital practice, and for that reason his conclusions might differ somewhat from those of Dr. Brown. He agreed with the reader of the paper that it is especially in laryngeal cases that benefit resulted from the use of antitoxin. He had seen, however, but few cases in which the intubation tube could be removed earlier because antitoxin had been given. In fact, there were then two patients in the hospital with which he is connected who have worn tubes for nearly a

year, although both have received antitoxin. He was not able to draw such a sharp line between laryngeal and nasopharyngeal diphtheria as Dr. Brown had done. Autopsies in fatal cases of laryngeal stenosis often show bronchopneumonia with the presence of the streptococcus and the staphylococcus in the pulmonary tissue. In other words, a secondary infection had taken place, although there was no lesion of the nasopharynx.

It was now the practice at the Willard Parker Hospital to give the full dose of antitoxin, 2000 to 6000 units, in one injection when the patient entered the hospital, instead of giving 1000 to 2000 units on the first day, and repeating the dose on the second and third days. Mild cases receive 2000 units, and septic or laryngeal cases 6000 units. Calomel sublimation was formerly much employed in the hospital, but of late it has fallen into disuse, partly because it seems unnecessary, and also because of the anemia produced by it.

DR. BROWN, in closing, emphasized the point he had made in the paper with regard to laryngeal and nasopharyngeal diphtheria being practically two separate diseases so far as treatment is concerned. It has been shown that antitoxin will clear up membrane very quickly, and the time during which the intubation tube must be worn is therefore shortened. Regarding the mixed infection observed in the Willard Parker Hospital in laryngeal cases, he believed it to be due to the conditions in the hospital, and not to the disease itself. In all city institutions there is more or less crowding of patients, and they infect each other. He referred to what had been said about calomel fumigation, and stated that it was quite true that anemia follows this treatment, but that a large percentage of cases recover in spite of the great prostration.

REVIEWS.

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS. By ROBERTS BARTHOLOW, M.A., M.D., LL.D. Ninth edition, revised and enlarged. New York: D. Appleton & Co., 1896.

THERE has been progress in therapeutics as well as in surgery. The eighth edition of Bartholow appeared in 1893, and three years later we have the ninth edition. In this the work has been enlarged by nearly fifty pages. These additions and alterations have been necessitated by the questionable introduction of new synthetic remedies. For the most part these medicaments are proprietary, and although they are largely used by a certain class of physicians, have not received the sanction of the official Pharmacopœia of the United States or of any other well-known authority until now. This is another potent illustration of the fact that methods in medical practice are steadily changing, and the question is constantly arising whether innovations are to be met and opposed or whether they are positive indications of the signs of the times and are to be accepted. In the Preface, Dr. Bartholow says, "In the absence of an authoritative tribunal to decide on the remedies for recognition and use, I have employed my own judgment in selecting those for treatment in this work. Time will determine the value of

those taken up for consideration; some will continue in favor, the failures will be eliminated." The whole volume is presented in the same style as its predecessors, and it will not appear strange to those familiar with the former editions.

AUTOSCOPY OF THE LARYNX AND THE TRACHEA.

Direct Examination Without Mirror. By ALFRED KIRSTEIN, M.D., authorized translation (altered, enlarged, and revised by the author), by MAX THORNER, A.M., M.D., Professor of Clinical Laryngology and Otology, Cincinnati College of Medicine and Surgery; Laryngologist and Aurist to the Cincinnati Hospital, etc., with twelve illustrations. Philadelphia: The F. A. Davis Co., 1897.

THIS translation, made at the request and with the collaboration of the author, is practically a second edition of the original German monograph. In that publication Kirstein first drew attention to a laryngoscopic method which was based on the fact that the angle usually existing between the axis of the oral cavity and that of the larynx could be changed into a nearly straight line by sufficiently tilting the chin upward and forward. This apparatus consisted of a specially designed tongue-depressor with electric light, and a head-mirror with similar illumination.

Of late Kirstein has suggested the possibility of discarding the electroscope and employing a special spatula alone. However we may be inclined to limit the applicability of this method, there is no doubt that it enables us in some cases to get a particularly good view of the posterior wall of the larynx and the trachea. Laryngoscopy is no longer the only method, although it will still be the classical one of examining the air passages for diagnostic purposes, but in endolaryngeal and endotracheal surgery Kirstein's simple method of direct inspection by extreme depression of the tongue will be of practical value in a majority of cases.

THE MEDICAL DIRECTORY OF THE CITY OF NEW YORK. Published under the auspices of the Medical Society of the County of New York. Press of Le Huray & Co., New York, 1897.

THIS annual directory appears on time, and is a welcome visitor. The same general plan has been followed in the preparation of it as in previous years except the arrangement of the names in the state lists for New York, New Jersey, and Connecticut, which have been arranged by towns instead of by counties. A medical directory like this is certainly indispensable in New York, and the separate lists necessitated by the present classification emphasizes the desirability of every practitioner in New York County becoming a member of the County Society. In the list of hospitals, dispensaries, etc., we notice that the names of attending physicians and surgeons to outpatient departments are not given.

TRANSACTIONS OF THE AMERICAN ORTHOPEDIC ASSOCIATION. Volume IX. Philadelphia: Published by the Association, 1896.

THIS annual report of the Orthopedic Association must

always be viewed as a fair index of the progress of orthopedic surgery. The contributions, to the number of thirty, speak for much laborious work though not presenting anything original.

The president's "definition of the scope of orthopedic surgery" is very elastic and would lead one to infer that the day is not far distant when fractures, dislocations, and infectious bone diseases are to be relegated to the orthopedist. With this tendency it is not surprising to see such an article as "Ingrown Toe-nail Mechanically Treated" in an orthopedic work.

The subject of rotary lateral curvature appears many times, the authors of these papers being Judson, Brackett, Roth, and Teschner. Teschner's view is the most recent as regards treatment; discarding all mechanic support he sees a panacea in the application of heavy gymnastics for a rapid cure. The unfavorable criticism was advanced mostly upon theoretic grounds.

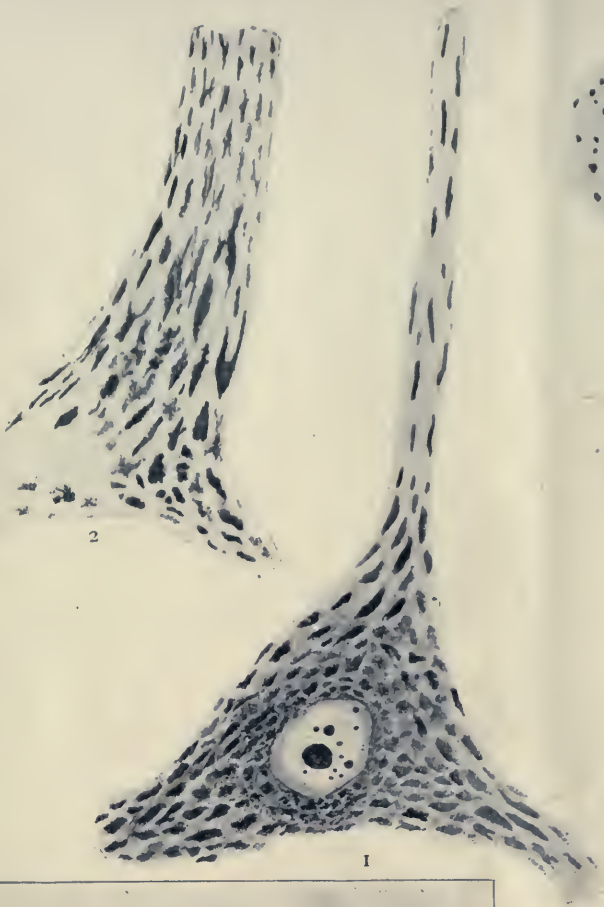
Treatment of congenital dislocation of the hip receives mention in a brief paper by Brodhurst, and a lengthy one by Lorenz. The former expresses himself as an adherent to the open method in treating these affections; for the latter's very able contribution a perusal of the article is worthy in order to fully understand his "cure by bloodless reduction and weighting." Among other interesting articles are "Spontaneous Dislocation of Hip-Joint," and "Torticollis Due to Adenoid Vegetations and Chronic Hypertrophy of Tonsils.

PRINCIPLES OR GUIDES FOR A BETTER SELECTION OR CLASSIFICATION OF CONSUMPTIVES AMENABLE TO HIGH ALTITUDE TREATMENT. By A. EDGAR TUSSEY, M.D. Philadelphia: P. Blakiston, Son & Co., 1897.

THIS little book of 144 pages well merits the attention of all who are interested in the care and treatment of pulmonary tuberculosis. Perhaps there is no question of the treatment of phthisis which deserves as careful consideration as that of a change of the environment of the patient. This makes a correct discrimination and selection of the various so-called health localities of prime importance. To aid the practitioner in this as well as to guide him in the selection of the cases of this disease which may be treated at home are two of the features of this instructive and practical book.

A VEST-POCKET MEDICAL DICTIONARY, embracing those terms and abbreviations which are commonly found in the medical literature of the day, but excluding the names of drugs and of many special anatomic terms. By ALBERT H. BUCK, M. D., New York City. New York: William Wood & Company, 1896.

This little book is not only convenient for prompt and constant use, but is entirely reliable and contains the latest medical terms. A large number of new words have been introduced in medical terminology during the past few years, and some of the older terms have undergone significant changes. A compact book containing a record of these new words and recent changes is most desirable. This little book meets the demand quite satisfactorily.



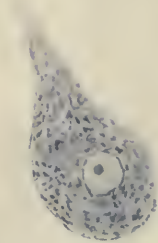
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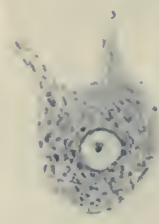
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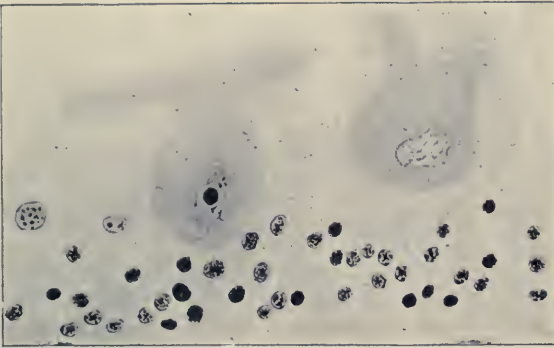
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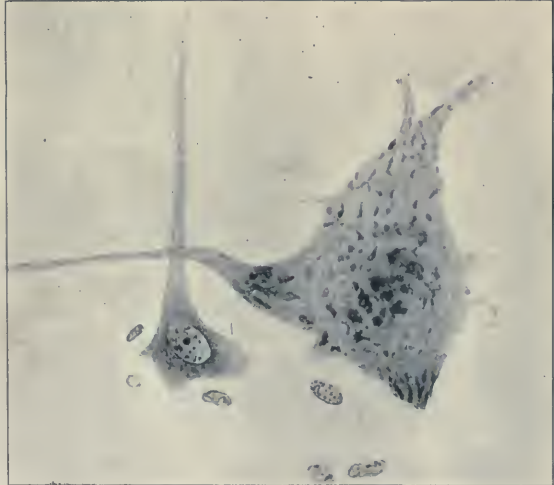
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NERVE-CELLS IN CASES OF SUNSTROKE (VAN GEISON).

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXXI.

NEW YORK, SATURDAY, JULY 24, 1897.

No. 4.

ORIGINAL ARTICLES.

SUNSTROKE AS IT OCCURRED IN NEW YORK CITY DURING 1896.¹

By ALEXANDER LAMBERT, M.D.,

OF NEW YORK;

VISITING PHYSICIAN TO BELLEVUE HOSPITAL; ASSISTANT BACTERIOLOGIST TO THE NEW YORK HEALTH DEPARTMENT.

THE ten days from August 4 to August 14, 1896, will always be remembered as a period in which an extraordinary number of sunstrokes occurred in New York City. During the week ending August 15th, the total number of deaths in New York City was 1810, the largest ever known since the Bureau of Vital Statistics was established; 648 of these were reported as deaths due to sunstroke. The death-rate for the two preceding and two succeeding weeks was about normal for that season of the year, showing for this week that the heat was the disturbing cause which produced this sudden and frightful increase of deaths. This is shown by the following figures:

Deaths from all causes for the week ending August 1st,	803.
" " " " " " " " 8th,	809.
" " " " " " " " 15th,	1810.
" " " " " " " " 22d,	822.
" " " " " " " " 29th,	736.

The deaths from sunstroke for the year ran as follows: April, 1 death, a stoker in the Twenty-sixth cable-car power-house; May, 4 deaths; June, 1 death; July, 30 deaths; August, 725 deaths. Total, 765.

For the different weeks of August, the death-rate from sunstroke was as follows:

Week ending August 1st	- - - - -	5 deaths.
Week ending August 8th	- - - - -	11 deaths.
Week ending August 15th	- - - - -	648 deaths.
Week ending August 22d	- - - - -	66 deaths.
Week ending August 29th	- - - - -	1 death.

Deducting these deaths from the total deaths from all causes we see that the death-rate from usual causes was not abnormal, except during the week ending August 15th, when the heat would again account for the increase, as its effects on chronic diseases in their last stages would hurry the fatal ending. The deaths from diarrheal diseases, which usually increase with high temperatures, were not abnormally high even during the week ending August 15th. This leads us to examine more closely the various factors which made up the sum total of the weather for the ten days of August (4th to 14th) to

ascertain what were the causes which produced such an unusual number of sunstrokes.

Dr. Daniel Draper of the Central Park Observatory has kindly furnished the writer with the following facts concerning the weather for the month of August, 1896: The mean hourly humidity for the whole month of August was 73.18, 100 being saturation. From August 4th to August 13th inclusive, the hourly humidity was more often below this mean than above it, this being especially true for the hours between 10 A.M. and 11 P.M., when most of the sunstrokes occurred. The high temperature, of course, was the main factor, ranging, as it did, in the shade at the Central Park Observatory fifty-three feet above the street, from 72° to 98° F. For a few hours in the early morning, *i.e.*, from 1 to 8 A.M., on August 4th, 5th, 7th, 8th, and 13th, it did fall below 80° F., but for five consecutive twenty-four hours, August 7th to 12th, except 3 to 5 A.M. August 8th, the temperature ranged from 80° to 98° F., the mean temperature being 86.7° F., that is, 10.6° F. higher than the monthly mean, and 12.8° F. higher than the mean of the other twenty-one days of August. Fortunately, the hottest day was a Sunday, August 9th, or the death-rate would have been even greater than it was. This represents only the temperature in the Central Park Observatory, which was several degrees cooler than in the streets and tenements. The temperature in the sun during these days accurately shows the temperature of the streets. During the working hours of the day, from 8 to 5 P.M., this temperature averaged 119.3°

DESCRIPTION OF PLATE.

1. Normal cell from the anterior horn of the spinal cord, stained by Nissl's method. (Van Gieson.)
2. Normal cell from the anterior horn of the spinal cord. (Van Gieson.)
3. Cells from the anterior horn of the spinal cord in insolation, showing diminution of chromophilic plaques and changes in their shape and position. (Van Gieson.)
4. Anterior horn cell from the spinal cord in insolation, showing chromophilic plaques broken down into fine dust. Nissl and eosin staining. (Van Gieson.)
5. Anterior horn cell from the spinal cord in insolation, showing entire absence of chromophilic plaques, and changes in nuclear membrane. Nissl and eosin staining. (Van Gieson.)
6. Normal Purkinje's cells from the cerebellum. Nissl staining. (Van Gieson.)
7. Purkinje's cells from the cerebellum in insolation, showing almost entire absence of chromophilic plaques, and changes in nuclear membrane and deeply stained nucleus. (Van Gieson.)
8. Large normal motor cell from the cerebral cortex, and small normal sensory cell. Nissl staining. (Van Gieson.)
9. Degenerated cortical cells in insolation, showing almost entire absence of chromophilic plaques and deeply stained nucleus. Nissl and eosin stain. (Van Gieson.)

¹ Read before the New York Academy of Medicine, May 20, 1897.

F., ranging from 94° to 137° F., and after sunset the temperature fell but little below 90° F. till nearly midnight. With the exception of two slight showers between 11 and 12 P.M., on August 7th and 9th, no rain fell to cool the heated stones and brick walls. The prevailing winds were land breezes coming from the north and west, and were scarcely perceptible, moving, as a rule, less than six miles an hour, and measuring in force on an average but one-fourth pound per square foot during the middle of the day, and none during the greater part of the night hours. To sum up the causes of the sunstrokes, then, we have the excessive and unusually prolonged high temperature, a high degree of humidity which, however, is usual for this climate, together with the absence of any cooling breezes, making a hot, sultry, lifeless atmosphere, the main unusual features seeming to be the continuous height of the temperature and lack of movement of the air.

This is in accordance with previous experience, for sunstrokes are much less common in dry, hot climates than in more moist climates with lower temperatures, *e.g.*, in India the dry, hot winds are better borne than the moist, warm winds, even with lower temperatures. The dry, hot winds cause a more rapid evaporation of the perspiration and a cooling of the body, while damp air diminishes evaporation and the refrigerating processes. A lack of movement in the air, with a high temperature and even a moderately high humidity, would have a similar effect and prevent cooling. This could be withstood for a certain length of time, but if long continued, as it was last summer, a time would come when the heat-regulating mechanism of the body would lose its equilibrium, and, perspiration ceasing, the danger to life would soon become imminent. As has long been known, man, of all animals, can withstand the greatest variations in temperature for the greatest length of time; and a few days of excessive heat in New York has not usually caused a great number of sunstrokes, as the resistance of the body is not overcome, except in those whose equilibrium has been weakened by illness, great exhaustion, or dissipation. Previous to August 9th there are records of but fifty sunstrokes, while from August 9th to 14th there were 739, and but fifteen more on August 14th and 15th. This total of 805 cases is from the records of Bellevue, Roosevelt, Presbyterian, New York, Hudson Street, St. Vincent's, and the J. Hood Wright Hospitals; and it is due to the courtesy of Drs. F. W. Jackson, Austin Flint, Jr., W. B. James, J. P. Thornley, H. P. Loomis, L. A. Conner, Joseph O'Dwyer, and G. S. Knickerbocker that I have been able to gather together so many, and

I desire to express my sincere acknowledgments to the above-named gentlemen.

Any cause which lessens the resistance of the body to external influences may be said to predispose to sunstroke. Excesses of all kinds, such as over-fatigue or alcoholism, either chronic alcoholism or even a single alcoholic excess, predispose to it. The large number of cases in which there was a history of alcoholism, either moderate or excessive, is a most striking feature in the cases collected. The great majority of the patients were alcoholics. Clinically, the cases divide themselves into three classes: First, heat prostration; second, asphyxial or milder form of sunstroke; and third, hyperpyrexial form of sunstroke. Of the first class, there were 247 cases; these patients did not lose consciousness and did not have a rise of temperature up to 105° F.; some even had subnormal temperature; all recovered. Of the second class or milder form of sunstroke, the so-called asphyxial cases, there were 38, and all of the patients recovered. These lost consciousness, but the temperature did not rise to 105° F., and there was often a marked predominance of nervous symptoms. Of the hyperpyrexial cases, there were 520, with 132 deaths. A few of these patients retained consciousness, but all had a temperature of 105° F. or over. This division may seem arbitrary and open to criticism, but as we study the three classes in detail, we shall see that, while the difference is a matter of degree and not of kind, the distinctive and prominent symptoms of each class justify such a classification.

The majority of the sunstrokes occurred between 2 and 5 P.M. and between 7 and 10 P.M. The nationalities were most diverse; Americans, English, Irish, Scotch, Swedes, Norwegians, French, Russians, Austrians, Italians, Bohemians, Poles, Germans, and Swiss were represented. The histories show no case of a negro being overcome. The occupations were equally varied and comprised all kinds requiring severe manual labor, and also those which did not require it, such as laborers of all kinds and trades, clerks, policemen, salesmen, conductors, etc. Among the women, cooks and laundresses predominated. Direct exposure to the sun was not necessary, although such exposure did cause the largest number of attacks. Among those who were stricken while at work, the greatest number were brought in from 2 to 5 P.M. After work had ceased for the day and the individuals had had time to go home and eat supper, usually with beer, the increased oxidation and heat produced by food added to the fatigue of the day, and the still hot, vitiated atmosphere of the tenements caused the occurrence of a large number of cases between 7 and 9

P.M. In the middle of the night the bakers and firemen would succumb, and, together with those who had been unconscious for some hours, would be brought to the hospitals, thus keeping up the steady stream of patients.

Heat Prostrations.—The prodromal symptoms of the heat prostrations usually were severe headache, dizziness, and pain in the back and legs, or epigastrium, and sometimes numbness and tingling of the hands and feet. In some cases these symptoms came on suddenly, while in others they were present for twenty-four hours or three or four days before the patient came to the hospital. In some cases there was also diarrhea or constipation, with nausea and vomiting, and great thirst. The patients, as a rule, however, could sleep well at night and would wake more or less refreshed, but after getting up and going to work the symptoms would again come on and they be forced to stop. In only a few instances did the sweating cease. On admission, these patients were conscious, usually with intense headache, either temporal or occipital, and they seemed dazed, the prostration often being extremely marked. The tongue was usually clean and normal in appearances though more often moist and more or less heavily coated. A few patients showed a distinct jaundice of the whites of the eyes. The temperature in a few cases was subnormal— 97° F.; the rest had more or less distinct rise of temperature, from 99.2° to 104.8° F. In the patients with a subnormal temperature, or with one of 99° or 100° F., the temperature in a few hours gradually came to normal and remained so. After from five to twenty-four hours' rest these went out feeling well. Some others, with a temperature of 100° to 102° F., after twelve, twenty-four, or forty hours went out well, with normal temperature and pulse. The majority of these patients, having a temperature of 100° to 104° F., had a slight thermic fever ranging from 101° to 103° or from 99° to 101° , or 102° F. for two, three or five days, and in one case for fifteen days. The pulse varied from normal to 140. The frequency did not seem to be in proportion to the height of the temperature, but was more dependent on the condition of nervous exhaustion. In the case of two patients in whom the temperature was 102.2° F., in one the pulse was 72 and in the other 130. In two with a temperature of 103.2° F., in one the pulse was 84 and in the other 132. In the majority of cases the pulse ranged from 84 to 96. Respirations, as a rule, were slightly increased, usually being from 24 to 28. In some cases they were about normal; in others, 36 to 40 per minute. Of the 72 histories of this class, 64 are of men and 8 of women. This class of patients was cared for in the hospitals,

usually without any special record being kept of each case; hence, of the 247 cases reported, there are but 72 histories.

Of the asphyxial form of sunstroke, there are but 38 histories, with no deaths in which the diagnosis of the so-called asphyxial form was positive. Probably some of the cases of heat prostration unaccompanied by histories may have been asphyxial sunstrokes, but there is no record to show it. Of the 224 cases of heat-stroke at Bellevue, there were but 18 of the asphyxial type. It is evident, therefore, that this second group is by far the least common form. The premonitory symptoms of this form of sunstroke are varied. Sometimes there were no premonitions and the patients suddenly lost consciousness; sometimes this was immediately preceded by sudden dyspnea, or dizziness, or chromatopsia. In others, there [were] chills and sweating, with a feeling of fever, diarrhea, and severe vomiting, or marked and persistent constipation. In some patients these symptoms came on soon after a meal; in others, while at work in the sun. One patient, while walking quietly in the street at 11 P.M., suddenly, without prodromal symptoms, fell unconscious. In some there was a feeling of burning in the head, or headache, or feeling of "pins and needles" in the head. On admission, these patients were unconscious, at times moaning and grunting, with convulsive movements, or they had been unconscious and were partially conscious, with a most intense headache, either temporal, occipital, or frontal. The tongue was white and coated; sometimes there was a petechial rash on the body, the skin was hot, dry, or covered with sweat, the pupils normal or dilated and reacting to light, and the respirations shallow. The unconsciousness lasted till after a bath or for some hours, with delirium; one patient did not regain consciousness for twenty-four hours.

In a large majority of these patients the temperature varied between 98° and 101° F., while in five it was subnormal— 96° , 97.6° , 97.8° F. In others, there was a rise of temperature to 102° or 104° F., these also had a slight thermic fever for three or four days, or a week. In a few cases in which the temperature on admission was 100° F., it afterward rose to 104° F., and then fell to normal by lysis in from three to five days. The pulse was not as variable, or, usually, as frequent as in the heat prostrations. With the subnormal temperatures the pulse was from 68 to 104; with the temperatures of 98° to 101° F., the pulse in one case was 60, while in the others it ranged from 72 to 100. In the case of the patients with higher temperatures it ran from 100 to 132, while the respirations, though frequent, shallow and quiet,

ranged from twenty to forty per minute. There was one patient who deserves special mention. Though conscious on admission, with a temperature of 99.8° F., a pulse of 108, and respirations 24, he soon became delirious, and when the thermometer was inserted into the rectum he jumped out of bed and out of the window. He afterward said he thought that the thermometer was about to explode and kill him. After being brought back to the ward uninjured, the thermometer being taken from him, he became quiet, but the next morning when he was apparently quiet and rational, a drinking cup was given him. This he seized and broke on the side of his iron bedstead, and endeavored to cut open his chest with a jagged fragment and kill himself. He remained insane for a week, then cleared up entirely. Thirty-six hours after his admission his temperature gradually rose to 104.8° F., and his pulse to 140. After a hot bath and a cathartic, both temperature and pulse fell, and after eleven days he made a good recovery. In this class there were thirty-three males and five females. The blood of some of these patients showed changes, which will be spoken of later. The ordinary urinary analyses showed no more changes than is usually found in an equal number of alcoholic and normal individuals.

The third, or hyperpyrexial, class of patients comprised the true cases of intense sunstroke. There are 520 cases, with 132 deaths, 492 being men, and 28 women. Of these, there are 248 history records, with 80 deaths. Of the 52 remaining deaths, many of the patients were moribund and died in the ambulance or so soon after admission that no record was kept in the hospital books beyond the cause of death. It is to be regretted, of course, that of the 272 patients without histories who recovered, the histories were either lost in the hurry and confusion or were not taken by the overworked and really worn-out house staffs. The wonder is that so many excellent histories were so accurately taken, and it speaks well for the enthusiasm and conscientious devotion to their work of the various internes of the hospitals in New York city. It was often a physical impossibility to do all that seemed necessary, and the patients received all the attention and the records were neglected.

In studying the hyperpyrexial class, it is noticeable that the prodromal symptoms, when present, were often more prolonged than in the other two classes, having lasted from four to five or seven days, though there are more histories in which there were no prodromal symptoms at all. The usual prodromes were physical weakness, anorexia, often complete, great irritability and restlessness, insomnia for three or four days, nausea and diarrhea or constipation.

One patient had marked increase of micturition for several days. Just before consciousness was lost, sweating ceased, and there was a sensation of intense heat all through the body or only in the head, with a feeling as if the head would burst open, and as if the eyes were bulging outward. In some cases there was dimness of vision, or everything seemed blurred; in others there was chromatopsia, and all objects were blue colored or red, yellow, or white, blue predominating. One patient saw innumerable yellow flames. Some patients said everything appeared black. Three patients complained of cramps and involuntary contractions of the muscles of the body and extremities; one that his feet were beyond control. These prodromal symptoms were more common in patients in whom the temperature did not rise above 108° F. than in those with higher temperatures. Those who had the higher temperatures either had no prodromes or remembered but little more than not feeling well, with anorexia, insomnia, and vertigo, for a few days, sometimes with chromatopsia just before they lost consciousness, and their next conscious realization was after the bath in the hospital. In several instances the friends said that the patient had kept at work long after he had ceased to answer questions or had noticed anyone or anything about him. One patient started for home at 10 A.M., returned to his work, changed his clothes, again left for home, and after arriving there, took a bath and went out again. He was picked up in the street unconscious at 5 P.M. and brought to the hospital, and did not regain consciousness till 2 A.M., or nine hours after his ice bath. He remembered nothing except leaving for home at 10 A.M. Another took a car and started for the hospital but stopped at his home, and later went out and brought in a pail of beer. He was brought to the hospital and remembered nothing after first starting for the beer. Another remembered leaving Hoboken on the Christopher street ferry-boat but nothing more, though he was picked up at Fifth street and East river, over two miles from where he had landed. Although apparently unconscious of their surroundings, these patients were able to perform complex acts in an apparently voluntary and rational manner.

The symptoms on admission varied somewhat. In every instance in which the consciousness or unconsciousness of the patients is mentioned, and in which the temperature was 110° F., or over, coma was complete. In one patient whose temperature was 109° F. consciousness was sufficiently retained so that he could be partially roused. With temperatures of 108° to 109° F., 1 patient was conscious, 3 partially so, and 30 unconscious; with temperatures 107° to 108° F., 6 were conscious and 21 unconscious;

with temperatures 106° to 107° F., 8 were conscious and 21 unconscious; with temperatures of 105° to 106° F., 11 were conscious and 11 unconscious. Those that were conscious complained of intense heat and headache. One patient walked into the hospital, with a temperature of 105° F., asked for the cold bath, and helped himself into it and out of it.

The unconscious patients presented a striking picture. Their skins were dry, hot, and flushed, or cool, pale, and livid or cyanotic, with a clammy perspiration, their eyes suffused and half open, or staring and filmy. The pupils were dilated, contracted or normal, or unevenly dilated or contracted; sometimes they reacted to light, sometimes they would not react. In addition, their mouths were open, with lower jaw twitching convulsively, and their respirations came in short gasps, with either a noisy, gasping inspiration and quiet expiration, or a quiet inspiration and explosive expiration, each expiration at times being accompanied by a piteous moan or groan. Sometimes they lay absolutely limp and flaccid, or with their muscles twitching convulsively or even in general convulsions. Often they were wildly delirious and fought and struggled furiously. The pulse was rapid, very frequent, and small and thready, or full and strong, with throbbing carotids; in the worst cases, they were pulseless. In many cases there was a petechial rash on the body and extremities, or only on the body. The patients emitted a peculiar, disagreeable odor quite distinct from that of fecal matter, though the discharges of the involuntary defecations and urinations, which almost always occurred, were of the most offensive character.

The temperature of the patients on admission, in the 246 cases in which it is mentioned, was as follows:

117.8° F.	1 died; New York Hospital	-	-	Total	1
115° F.	0 died; 1 recovered, Presbyterian Hospital	-	-	"	1
$112-113^{\circ}$ F.	5 died; 3 recovered	-	-	"	8
$111-112^{\circ}$ F.	3 died; 2 recovered	-	-	"	5
$110-111^{\circ}$ F.	23 died; 22 recovered	-	-	"	45
$109-110^{\circ}$ F.	20 died; 38 recovered	-	-	"	58
$108-109^{\circ}$ F.	15 died; 26 recovered	-	-	"	41
$107-108^{\circ}$ F.	7 died; 20 recovered	-	-	"	27
$106-107^{\circ}$ F.	3 died; 29 recovered	-	-	"	32
$105-106^{\circ}$ F.	1 died; 27 recovered	-	-	"	28
78	168			246	

The pulse, on admission, showed no regular variation with the temperature, for from 105.4° to 112° F. it had the same frequency and varied with all degrees of temperature, e.g., temperature 105.4° F., pulse 150, respiration 50; temperature 105.4° F., pulse 100, respiration 24; temperature 110° F., pulse 90, respiration 38; temperature 110° F., pulse 150, respiration 50. The quality of the pulse was the best indication of the patient's condition, as sometimes a pulse of 144 would be of good quality and strong, or feeble and small. The frequency and

quality bore no regular relation to the temperature or respirations.

The following table shows this more in detail:

Temperature.	Pulse.	Respirations.	Cases.
117.8° F.	180	64	1
112° F.	160	40	1
110° F.	90 to 150	16 to 50	12
109° F.	116 to 160	30 to 50	11
108° F.	112 to 160	20 to 44	9
107° F.	100 to 162	18 to 52	8
106° F.	96 to 160	18 to 50	16
105° F.	96 to 150	16 to 50	10

Total, 68

The averages of the above table are as follows:

Temperature.	Pulse.	Respirations.
110° F.	132.3	31.6
109° F.	151.2	38
108° F.	138	32.6
107° F.	128.8	34.6
106° F.	135.6	30.9
105° F.	111.3	29.1

During the administration of the bath or cold pack, or within an hour afterward, about one-half of the patients became conscious, and usually remained so. Others did not become conscious after the first bath, but after their temperature rose again and a second bath was given, consciousness returned and they remained rational. Many patients did not regain consciousness until the day following the attack, some not until three or five days, and one not for ten days, and then recovered. Many with a temperature above 108° F. did not regain consciousness at all, and though the temperature came down, the pulse remained frequent, dyspnea and cyanosis often being marked, and such finally died. These patients usually died during the first twenty-four hours after admission; some lived forty-eight hours or more, while one lived six days. There were several patients who became conscious immediately after the bath, or after a few hours, and remained so from four to nine hours or more, often from one to two days; then they again became unconscious, with marked delirium, and remained in this state from two to seven days, and then recovered. A few of these, however, died during the delirium. The patients who came into the hospital in convulsions usually continued to have these even after their bath. It was commonly a tonic spasm, with intermittent clonic convulsions general in character, though sometimes confined to the arms or legs or head and neck. One patient had left-sided convulsions of the face, arm, and leg, and these continued for some hours until he died. A marked rigidity of the muscles without convulsions was not uncommon. These convulsive seizures were very common, and sometimes were controlled by a second bath, but not usually so. At times they would disappear and return twenty-four hours later, or even two or three days after the patient had become conscious and quiet. A few patients died suddenly in

a convulsion twenty-four hours after consciousness had been regained.

The fall of temperature after the bath was followed in the case of a majority of the patients by one or more secondary rises. This rise occurred in all in whom the initial temperature was over 110° F., if they did not die with the fall of temperature which accompanied the bath or cold pack. In a few patients, with a temperature from 107° to 110° F., there was no marked secondary rise above normal, and they went on to an uninterrupted recovery. In patients with a temperature of 105° to 107° F. this was a common occurrence. In most patients who did well, one or two slight secondary rises was the rule, the two rises being less common than the single rise. Some patients recovered, though their fever curve showed three to four, and even five, marked rises. Those patients who succumbed usually did so upon the first or second rise, or failed to react after the two or three baths given to reduce these exacerbations. Some, however, had three, four, five, or more secondary rises before they died. One patient, with an initial temperature of 108° F., had nine exacerbations up to 104° or 105° during forty-eight hours before he died.

The first rise occurred most frequently three to six hours after the first bath, next in frequency after twelve to eighteen hours. In bad cases the rise often occurred within the first three hours, sometimes within an hour. The second secondary rise occurred most often twenty-four or thirty-six hours after the bath, next often from twelve to eighteen hours afterward. In bad cases this second rise would occur in two or three hours after the first secondary rise, and from three to eight hours after admission; that is a majority of the patients required the taking of active measures to reduce their temperature three times during the first twenty-four hours after admission. The third rise occurred in the ninth or twelfth hour, or during the second and third day after admission, and the fourth and fifth rises during the second, third, or fourth days. Many patients had more or less of a thermic fever, which was not high enough to require interference, the temperature ranging from 103° to 101° or 100° F., and lasting from three to five or from seven to ten days, and in some cases even two or three weeks. In some cases the fever averaged a little higher and the patients required sponge baths. The pulse, after the temperature had fallen, improved in the patients who recovered, both in its force and frequency. As a rule, it fell to normal more slowly than the temperature. After a few days, however, even if there was a moderate thermic fever, the pulse usually averaged about 80 or 90. In the fatal or very severe cases the pulse remained rapid

and frequent, was apt to be thready, and was usually feeble and soft.

The examination of the blood showed a decided leucocytosis. The red cells were distorted and sometimes apparently shrunken, and the leucocytes contained pigment. The hemoglobin color-test in the case of twelve patients showed 85 to 125 per cent., and averaged 100 per cent. This is far above the average, and was due to the free hemoglobin in the blood from destruction of the red cells. The subsequent anemia in nearly all the patients was very marked.

Some patients had bloody expectoration during the administration of the bath and for awhile afterward; a few had bloody stools.

Retention of the urine was not an uncommon symptom. The specific gravity of the urine of the first twenty-four hours seemed to be lower than normal and to contain a lessened amount of urea. In seventeen samples the amount of urea was above normal in two, normal in one, and in fourteen below normal. The urine of the same patients, from five to ten days later, was usually of higher specific gravity, and contained the normal amount of urea. These few observations do not justify any sweeping conclusions, but the facts were sufficiently noticeable to be striking. Often the urine was normal; often it was of low specific gravity, due to chronic Bright's disease, but in these cases it remained the same after recovery from the attack.

The fatal complications observed were meningitis, pneumonia (one with sacculated empyema), and acute exacerbations of chronic kidney disease, which gave rise to suppression of the urine or to dyspneic attacks, with emaciation. The cause of death in most cases was simultaneous failure of the respiratory and cardiac centers. In some instances a sudden rigidity of the respiratory muscles, and in fact of the whole muscular system, caused suffocation. This rigidity was so intense that artificial respiration was impossible. When respiration ceased before the heart, and artificial respiration could be performed for one-half to one hour, it sometimes saved the patient. In other patients the heart stopped first and nothing would stimulate it.

The immediate sequelæ of sunstroke were headache, extreme weakness and malaise, dizziness, soreness in the muscles and bones, and frequently numbness and tingling in the hands and feet. This tingling lasted for days, and in some cases for two or three weeks; in one case it was present for two or three months. The anemia was usually extremely marked. Two patients developed incoordination of the extremities, which has remained permanent. One patient had attacks of vertigo and fainting,

which confined him to bed for two months. At present he has complete atrophy of the right trans-versus pollicis muscle and loss of power in the flexor muscles of the right forearm, his hand being so weak that he can scarcely hold a pen. Three patients developed delusional insanity; two of these recovered and were apparently normal after from six to eight weeks, while the other left the hospital still suffering with delusions.

Dr. R. M. Daley of the Bellevue Hospital staff has endeavored to trace for the writer all the patients that were treated last summer for heat-stroke at Bellevue Hospital. He has been able to obtain the following facts: Number of patients found nine months after the sunstroke occurred, 73. There were no sequelæ in 42. Three had become insane, and 13 suffered from attacks of dizziness and were more sensitive to heat. Five had frequent severe headaches, which they had not had previously. Chromatopsia on hot days was present in 1, and gastritis in 1. One patient had a changed disposition; formerly having been good-natured, even when drunk, he is now ugly and irritable, especially when drinking. One patient for a period of two months felt a numbness of the whole body, though he could easily feel a pin prick, etc. Numbness and weakness of the hands and feet, which persisted for three months, occurred in two cases, and the same conditions persisted after nine months in another. One patient had an increased number of epileptic attacks since the occurrence of the sunstroke and was re-admitted to the hospital six weeks after his sunstroke, with polyuria and glycosuria, which had appeared since his attack. Dr. Van Gieson has given me the report of one of the sunstroke cases from the New York Hospital. Within two months after the patient's seizure she developed multiple neuritis and dementia and two months later died with dementia. One patient insists that his eyesight has been much improved since he suffered the sunstroke.

There was a peculiar asthenic condition noticed in a few patients which deserves special mention. Among the Bellevue Hospital records there are five such histories occurring in the services of Dr. Jackson and the writer. While similar cases probably occurred in other hospitals, the records at the writer's disposal do not mention them. Four of these patients had an initial temperature of 106.2°, 106.4°, 108.2°, and 109° F., respectively, that of the fifth not having been recorded. They all reacted well after the bath and became conscious, either immediately or within four hours, and remained rational for twenty-four hours. They then became delirious, three of them wildly so at first, fighting everyone who came near them, and then sank into a low,

muttering delirium. Two developed low delirium without having passed through the previous wild stage. Their skin was dry and harsh, their emaciation rapid and extreme; and they had incontinence of urine and feces. Their half-closed eyes, hollow, sunken cheeks and extreme general emaciation, in a few days presented a striking picture compared with their well-nourished appearance on admission. During the wild delirium their temperature rose to a high point, frequently equaling the initial rise, with a pulse ranging from 120 to 150, but at first, during the stage of low delirium, the temperature of all five patients was from 99° to 102° F., and the pulse from 80 to 100. Finally, the pulse again became frequent (120 to 130), and the temperature, in three cases, rose ante-mortem, to 106° and to 110° F. In two cases the temperature did not rise. These five patients died ten, three, six, eleven, and eighteen days after the seizure. They were all markedly alcoholic, and probably this factor had a controlling influence in the course of the disease. In these cases, however, during the wild delirium, the temperature rose to a much higher point than is usually observed in delirium tremens, and the extreme emaciation was more rapid and marked than is usual in the low, muttering delirium met with in the ordinary cases of so-called alcoholic "wet brains."

Another sequel alluded to, that of dryness and harshness of the skin, was present in a great many of the cases of hyperpyrexia. Usually two or three days after the sunstroke the skin over the whole body became dry and harsh and finally peeled off in fine particles or in large flakes.

Ecchymoses were common in the patients who bruised themselves during their delirium or during their convulsions. These ecchymoses were much more extensive than is usual in the case of ordinary bruises. Hypodermic injections frequently caused ecchymosis, and if Hoffman's anodyne or aromatic spirits of ammonia had been used, small abscesses often followed. These healed rapidly under the application of ichthyol.

It is interesting to note that six patients gave a history of having had a heat-stroke some years previous to the one during August, 1896. In one instance this had occurred twenty-eight years before, in one, five years, and in four, "several years." All these patients recovered from the more recent attack. Six patients were re-admitted to the same or to different hospitals upon the recurrence of sunstroke within ten days, and while four of these recovered, two died.

The treatment of sunstroke at the various hospitals during August, 1896, differed so much in essential details that we have an opportunity of judging as to which appears to be the best. This is especially

true, as all of the hospitals treated at the same time exactly the same class of patients and the same types of the disease. The heat prostrations were treated alike in all of the hospitals. The patients were put to bed, and if necessary given a cool sponge bath, and phenacetin or some such drug for the headache. This, with rest, was all that they required. Sometimes an ice-cap applied to the head gave great relief. The asphyxial class of patients were given tub baths at 60° F., or sponge baths, or if the coma and nervous symptoms demanded it, they were put for a few minutes into an ice bath and thoroughly rubbed, being taken out when the body temperature fell a degree or two. They were stimulated with drugs when necessary, but for the most part they required little more than rest and quiet and the stimulation of a cool bath. But it is in the treatment of the hyperpyrexial cases that the true test of sunstroke treatment is to be made. There is no disease which demands more immediate and active treatment, or which will respond more satisfactorily when proper measures are instituted. Hydrotherapy in some form was tried in all cases. It differed in the method of application and the temperature of the water employed.

The records of mortality at the various hospitals furnish a fair estimate of the efficacy of the different methods of treatment. The mortality among the patients treated with ice baths, the bath being continued until the body temperature had fallen to about 103° or 102° F., varied in the different hospitals from 18 to 27.5 per cent. When the ice pack was used in some cases instead of the ice baths, the mortality was 25.5 per cent. When the ice bath was given for ten minutes, irrespective of the point to which the temperature fell so long as it remained above a safe limit, the mortality was 40 per cent.

Among the patients treated by means of baths ranging in temperature from 50° to 75° F., the mortality was 33⅓ per cent.; when the baths were given at a temperature of from 90° to 110° F. and reduced in from fifteen to twenty minutes to 72° F., as was done at the Brooklyn Homeopathic Hospital, the results do not seem to have been as favorable as with the cold baths. Judging from a published article,¹ at this hospital there were 49 heat cases of all kinds treated; 17 of the patients were unconscious, and 7 were wildly delirious; nine died, 2 living for only five and six minutes respectively after admission. It seems fair to say, therefore, either that all of the 7 patients who exhibited severe symptoms died, or else that in the case of 17 patients who were unconscious, with high or moderately high temperatures, there were 7 deaths, or a mortality of 41.17 per cent.

¹ *The Chironian*, February 1, 1897, p. 98.

Among the patients treated with a needle spray from a hose attached to a cold-water faucet, the mortality was 11.5 per cent. In St. Vincent's Hospital, in which the treatment was that of cold packs followed by hot packs, among 197 hyperpyrexial cases the death-rate was 12, or 6 per cent. Counting in the 8 patients who died a week or more later, the mortality was but 10.15 per cent. The death-rate of sunstrokes as given in Quain's "Dictionary of Medicine" is from 41 to 50 per cent. In the 926 cases reported by Aiken,¹ the mortality was 421, or 56.62 per cent. Of the 520 cases of hyperpyrexial sunstroke, with 132 deaths, recorded in this paper, the mortality was 25.38 per cent. Among those patients who lived long enough to be treated, the mortality was 25.12 per cent. The treatment employed in the various hospitals of New York City, therefore, certainly gave satisfactory results. If we consider the various methods more in detail we can arrive at a fair judgment of which method of treatment promises the best results.

By an ice bath is meant a tub bath in which ice, crushed into moderately sized pieces, is constantly kept floating. The temperature of the bath is about 40° F. This method of treatment has its advantages and its disadvantages: The advantages are that it is a sure and rapidly effective means of reducing the body temperature and is a powerful stimulant to the nervous system. The ice should be removed from the tub before the patient is placed in the water, and after a minute or two from half a bushel to a bushel of cracked ice should be poured in; or, if there is only time in which to prepare the bath, the patient should be placed in the water and the ice be added. If the patient is lowered into a bath with the ice remaining in it, especially if it has been standing for some time, the shock is too great, and some patients as soon as they touch the ice become rigid, respiration ceases, and they cannot be revived. This, fortunately, is rare, but it does occur, and should be guarded against. This rigidity does not occur if the ice is added after the patient is in the water.

The head of the patient during the bath should be supported and constantly bathed with the ice water, care, of course, being taken to keep the water out of his eyes and face. Incessant and vigorous rubbing of every portion of the body is an absolute necessity. This must be kept up during every moment the patient is in the bath. The rectal temperature should be taken every minute or two, and when it falls to 104° or 103° F. he should be lifted out, placed in a blanket, rubbed dry, and allowed to rest. Stimulants should be given as the pulse may indicate. It was noticed that if the temperature was allowed to fall

¹ Aiken's "System of Medicine," vol. ii.

below 102.5° F. during the bath, it was apt to continue down to a subnormal point, and depression, instead of stimulation, was the result. After a subnormal temperature, the second rise was apt to occur sooner and be more intense than when the temperature had fallen to normal. When such baths were properly given, the pale and livid or cyanotic color of the skin soon changed to a bright red, and the pulse, and especially the respiration, improved, and sometimes consciousness returned even in the bath itself.

The length of time necessary to reduce the temperature varied so much with all temperatures that no regular duration can be given; the time was usually judged by the fall of the temperature, though a few patients did not bear the bath well, and were taken out before the temperature was reduced to 104° F. When the bath was given for ten minutes, irrespective of the height of the body temperature, the results were not good. In the case of some patients, even those with the highest temperature, the fall was so rapid that ten minutes was too long, while in a majority of the cases the time was not sufficient, and the temperature after the bath, instead of falling to near normal, did not fall below 106° or 104° F., and it soon rose again so that after the lapse of an hour another bath was required. The overheated body and viscera had not been brought sufficiently near the normal temperature to enable the organs to resume their functions. The opportunities for recuperation were therefore greatly diminished.

The disadvantages of the ice bath are that it requires a large staff of assistants to hold a struggling patient, and to rub him as thoroughly as the circumstances demand. It is tiresome and painful to those giving the bath. Six or eight assistants are required to each tub, and when two or three baths are being giving at one time, as was the case for hours at a time at Bellevue, these disadvantages are increased. A large amount of ice is necessary, and an adequate amount may not always be at hand. For example, 20,000 pounds were used at Bellevue Hospital from August 9th to 13th for the ice-water baths alone.

The ice pack was given by placing a patient on a rubber sheet and packing large pieces of ice along and between the legs and along the sides of the body. The upper surface of the body was then rubbed with the hands and with pieces of ice. This procedure often required more than an hour to reduce the temperature. When it was employed, the temperature was allowed to fall to 101° F., and it almost always went to 96° or 95° F. This method does not permit of the necessary amount of friction being applied over the whole body. The writer saw it used extensively when he was an interne at Bellevue Hos-

pital, and is convinced that it is not as stimulating as a cold bath, and, therefore, not as efficacious.

At the Flower Surgical Hospital, as reported in the *Hahnemannian Monthly*¹, a method of procedure was followed which seemed to be excellent. The patient was stripped and put on a cot covered with a rubber sheet, an ice cap was applied to his head, and three sections of hose with nozzles giving a fine needle spray were fastened to cold-water faucets and the patient vigorously sprayed until his rectal temperature was reduced to 103° F. The patient was then wrapped in two blankets. If a secondary rise to 104° or 105° F. occurred, the spraying was repeated until the temperature fell to 101° F. There were twenty-six patients thus treated, their temperature averaging 108° F., and of these but three died, a mortality of only 11.5 per cent. The needle spray is a tremendous nervous stimulant, and with tap-water at 75° F., there is no sudden shock. This method is so excellent and is founded on such sound principles that it deserves widespread recognition.

At St. Vincent's Hospital the treatment was as follows: The patient wrapped in a cotton sheet, was placed on a stretcher, covered with a rubber sheet. Dipperfuls of cold water were forcibly dashed on him from a distance of several feet. In the very severe cases, every two or three minutes a small stream of very cold water from a pitcher was allowed to fall from a height of six or eight feet and strike the patient on the forehead between the eyes. This treatment proved to be powerfully stimulative, and was continued until the body temperature fell to 104° or 103° F. The patient was then wrapped in blankets and surrounded by hot bottles. The body temperature fell slowly to normal, and no marked reaction occurred. Often after a short interval, the warm pack brought on sweating and the patient slept. When a second rise of temperature occurred, the procedure was repeated. Cold water and whisky were given upon awakening. Digitalis and liquor ammonii acetatis were about the only stimulants used. The convulsive seizures were controlled by whiffs of chloroform. The giving of strychnin was avoided, as it was believed it increased the convulsions. Of the 197 hyperpyrexial patients thus treated, only 12 died, or 6 per cent. Eight others returned a week later and died of meningitis, etc. Including all the deaths, as has been done in the records of other hospitals, there was a mortality of but 12.15 per cent., by far the best results obtained. This plan of treatment was suggested by Dr. Joseph O'Dwyer and was carried out by his house physician, Dr. C. F. Chandler.

Drugs, when administered in their usual doses, did

¹ January, 1897, p. 61.

not appear to act, and it seemed to the writer that until the temperature fell below 104° or 103° F., they had very little if any effect, either in stimulating the heart or quieting the delirium. Those which seemed to stimulate the best were camphor in ether, caffeine, Hoffman's anodyne, digitalis, whisky, and strychnin. Alcohol in some form was often necessary, and was usually well borne. In the most pronounced cases of delirium and convulsions, the best sedatives were morphin and small doses of hyoscin. Trional also acted well, and even in large doses produced no ill effects, one man taking as much as 100 grains during twenty-four hours. The sequelæ (malaise, weakness, and loss of appetite) were best treated by the administration of a mixture containing from 5 to 15 minims of the tincture of nux vomica, and from 10 to 20 minims each of the compound tinctures of cinchona and gentian three times a day. In patients in whom a sudden rigid spasm of the respiratory muscles and a general muscular rigidity occurred, one or two drops of amyl nitrate dropped on the mucous membrane of the nose relaxed the spasm. One or two patients treated in this manner recovered after they were thought to be dead. This treatment was also effective in sudden collapse. Artificial respiration practised for half an hour to an hour after breathing had ceased, succeeded in some cases in causing it to be re-established, and some of the patients recovered.

The advisability of bleeding sunstroke patients has long been a mooted question. Most authors strongly condemn the practice except in a very limited class of patients, such as large, full-blooded men with a marked tension of the pulse, throbbing arteries, and wild delirium. The writer saw it tried on two such patients at Bellevue Hospital, with beneficial effects. In some other less sthenic cases it did not appear to do good, and it is a question if it did not do actual harm.

Ice-water enemata were used in many cases at Bellevue Hospital, with excellent results. This treatment was especially beneficial in the case of patients who were conscious on admission, with a temperature of 106° to 107° F. Within an hour after the enema the body temperature had fallen to 100° F., and in some cases it did not rise again. Sometimes the ice-water enema was used to control the secondary rise of temperature, but it did not prove very effective for this purpose. When the patients were unconscious the enema did not produce the same amount of stimulation as the cold bath with friction, and was therefore not as beneficial, and in fact it did not control the rising curve of the temperature, as well as the cold sponging or cold baths.

Japanese ice-bladders filled with ice and placed

in the axillæ and on the groin of patients with thermic fever, whose temperature ranged from 103° to 105° F., controlled the fever sufficiently, and if additional cold was needed, the cold coil on the abdomen was of great assistance. These means were especially effective with women. When the number of baths to be given was a serious consideration, these simple methods were of considerable help.

The best treatment, therefore, seems to be the application of a needle spray, ice bath, or cold pack until the temperature falls to 103° or 104° F., followed immediately by a hot pack with stimulants and sedatives, as one's judgment may deem necessary.

A brief summary of the pathology and causation of sunstroke is all that the limits of this paper will permit. The gross pathology has always been conflicting, and the changes found are not characteristic of any definite and uniform lesions. It seems that we must finally turn to cellular pathology in order to study the changes in the cells themselves and in order to learn, if possible, both the cause and its effect. The clinical symptoms also indicate this. The prodromal symptoms are those of acute functional disturbance, and the serious later symptoms show that there are grave changes in the blood and in all the nervous centers, especially those which rule and hold in stable equilibrium the heat-controlling mechanism of the body.

Dr. Ira Van Gieson, Director of the Pathological Institute of the New York State Hospital for Lunacy, has kindly furnished me with the following report of the changes in the nervous system in three cases of sunstroke. This is but a preliminary report on a series of fifteen cases which occurred during the summers of 1895 and 1896. He has allowed me to anticipate his more detailed notes on the pathology of sunstroke, which, with more extended clinical observations by the writer, will appear in a future issue of the *New York State Hospital Bulletin*. Sections have been examined from the spinal cord, cerebellum, and various portions of the cerebrum, such as the caudate nucleus, optic thalamus, lenticular nucleus, paracentral lobule, cornu amonis, and middle portion of the second frontal convolution. All these sections show more or less pronounced changes in the chromophilic plaques of the ganglion cells. These plaques in some cells are changed in shape and are fewer in number; in others they appear to be broken up into fine dust, and, again, in others have even entirely disappeared. The nucleus stains more deeply with methylene blue than it should normally, and within the nuclear membrane there are some minute spherical granules which are not normally present. As the chromophilic plaques show the potential energy stored in the cells, and any

changes in the nucleus may be said to be directed against the life of the cell, it will readily be appreciated how extensive are the changes which have occurred. In the drawings which Dr. Van Gieson has prepared, a comparison with the normal cells from these regions will indicate these changes better than a description does. His deductions from these changes are as follows:

"We have found in these three cases a universal exhibition of acute parenchymatous degeneration of the neurons of the whole neural axis. In the cerebral cortex and in the cerebellum the cells show the same stages of degeneration. The spinal-cord cells apparently are not as extensively involved as those in the cortex and cerebellum. There seems to be no other interpretation open as to the significance of this degeneration than the operation of a toxic substance upon the ganglion cells. There is a resolution of the elements of the ganglion cells as an exhibition of the chemic reaction between a poison on the one hand and the constituents of the cell on the other. This toxic resolution of the ganglion cells may not necessarily go on to the destruction of the cell, and is compatible with restoration and recovery of function and structure. This depends, however, upon the cessation of the poisons. In other words, in insolation there is toxic cytolysis or cell resolution of the neurons, which depends upon the condition of the body forces, the eliminative capacity of the body, and the strength and duration of the poison. Depending on these three factors, the neural parenchymatous degeneration may result in restoration or destruction of the neurons involved. I have no hesitation in accepting the toxic agency of insolation from the morphologic changes in the ganglion cells, because I find that such changes are in every way similar to those produced by the operation of a great variety of other poisons, including the extrinsic group, such as alcohol, lead, etc., and the microbian poisons and other intoxications, both in human diseases and in those produced experimentally in animals. Furthermore, by the method of elimination in excluding other groups of poisons, I feel justified in concluding that sunstroke is a species of auto-intoxication, and that the neural symptoms find a clear and definite explanation in the acute parenchymatous degeneration induced by an autogenous poison."

The nervous system of one of these three patients was from a boy in whom alcohol can be surely excluded.

While the autotoxic basis of sunstroke, with heat as a contributing cause, has previously been suggested, to Dr. Van Gieson should be given the full credit of placing this theory on a more definite, tangible basis by finding parenchymatous degeneration

of the nervous system similar to other toxic degenerations of this tissue, and by stimulating the chemico-physiologic experiments of Dr. Phœbus Lèvene, Associate in Physiologic Chemistry at the Pathological Institute, in his demonstration in animals of the toxic properties of the body fluids in insolation.

Ten years ago, Vincent, in France, as a result of experimental work, came to the conclusion that the exaggerated elevation of temperature acts principally on the central nervous system, but in an indirect manner.¹ In other words, it is a poisoning of the economy by the products of combustion which accumulate in the blood. The morbid trouble provoked by hyperthermia is the expression of an auto-intoxication which, after having a general excitation of the central nervous system, brings on its final destruction. On the other hand, Wood² and Laveran,³ and many others, consider that all the changes and symptoms are due solely to the excessive amount of heat in the body.

Let us first consider the mechanism of sunstroke from the standpoint of its causation by heat alone. The normal body can and does resist any undue decrease or increase in its temperature as long as the equilibrium of the heat production, distribution, and loss, is maintained. This is accomplished by the contraction or dilatation of the skin capillaries, and by a decrease or increase of the perspiration, with the consequent decrease or increase of the loss of heat from the skin. It is also supposed by some authors that certain cerebral centers preside over the heat regulation by inhibiting production. Heat is produced by the chemic metabolism constantly going on in the body, and is especially generated during muscular action. Two and six-tenths per cent. of the heat is lost from the body by warming the substances taken in as food and drink, 2.6 per cent. by warming the inspired air, 14.7 per cent. by evaporation, and 80.1 per cent. by radiation and conduction from the skin. During such weather as was experienced last summer the loss of heat by cooling inspired air which was already three-fourths saturated with vapor and often hotter than the body, would practically be nothing. Radiation and conduction from the body to hotter air would also be abolished, and over eighty per cent. of the sources of heat loss would be withdrawn and the body would have to depend on evaporation for its loss of heat. If the air should be nearly saturated with vapor, and no air be stirring to renew that in contact with the body, it is readily seen that if such conditions should be long

¹ Vincent, quoted by Laveran, *Bull. de l'Académie de Médecine*, 3d series, Vol. 32, 1864, p. 501.

² Wood, "Sunstroke," 1872; also, Pepper's "System of Medicine."

³ Laveran, *loc. cit.*

continued, and if large amounts of heat were produced by muscular action, the strain on the regulating centers would be severe. Should these centers be weakened in any way by previous illness or dissipation, they would soon succumb, and heat accumulating quickly, some form of sunstroke would supervene. If sweating ceased, as it usually does in sunstroke patients, just so much quicker will all heat loss be in abeyance, and all the heat produced be stored up and the danger to life be imminent.

Increased heat causes increased oxidation and more heat; an increase of oxygen being demanded, the respirations would increase and the pulse-rate quicken under the stimulation of the heart by the heat. If the resistance of the patient should be great, or the exposure to heat not excessive, the patient would suffer from heat prostration, which is but the prodromal period of the asphyxial or hyperpyrexial forms, if the resistance should be less, or the exposure more severe, unconsciousness might come on and the asphyxial form develop, with a paralysis of the vasomotors which would prevent a great rise of temperature, for, as is well-known, vasomotor paralysis causes a dilatation of the skin capillaries and a consequent fall of temperature, due to the sudden increase in the loss of heat. If, however, exhaustion occurs, with an accumulation of heat so excessive that the heat loss would not counteract it, the great production and accumulation of heat would give rise to the hyperpyrexial form. The blood changes and all the changes in the body will be caused by the excessive heat, and death will ensue when these changes are such that the nerve-centers can no longer functionate.

But does heat cause a cessation of sweating, and how? Is it a parenchymatous change in the sweat glands, due to exhaustion from excessive action and consequent cessation of function, or is it a cessation of action caused by the effect of heat on the nerve-centers governing the secretion? It is not due to changes causing non-conduction in the nerve-fibers, for these will conduct perfectly at a temperature of 125° F.¹ As yet no experiments have been successful in solving this question. The cessation of sweating in other fevers we believe to be brought about by the cause of the fever, not by the fever itself, *i.e.*, by the temperature *per se*. In the severe cases of sunstroke there is a vasomotor constriction, not a dilatation as most authors claim. This is proved by the cold, pale skin when the rectal temperature is 109° F., or more, and this constriction of the skin vessels in other fevers is also produced by the causal agent, not by the temperature. Will the theory, therefore, of some poison or poisons circulating in

the blood, *i.e.*, the auto-intoxication theory, better explain the clinical symptoms? The heat and concomitant factors of the weather are undoubtedly contributing causes, just as exposure to cold is the contributing cause to ordinary lobar pneumonia. The effects of heat on the body, as shown by the prodromal symptoms, are shown in disturbances in the glandular and digestive functions of the body. The chemic metabolism of digestion is not normal, and substances may be produced which, in the disturbed functional activity of the liver and other glands, are not properly and normally broken up, or there may be abnormal substances produced by the disturbed condition of the digestive apparatus, which are absorbed. These different substances carried over the body are not excreted because of the functional disturbances of the emunctories, and, by the intense and rapid action of these substances or by their slower and more prolonged action on the ganglion cells of the central nervous system, produce the changes described above. There will, therefore, first be symptoms of functional disturbances, followed by those of destructive action. The equilibrium of the heat-regulating centers will be disturbed because these centers will themselves be affected. The same external causes affecting heat loss will be present, and the same train of events will occur as though heat alone were the sole cause.

Many patients die of sunstroke with a temperature which, in other fevers, would not be unusual and do not cause death. For example, one patient came into Bellevue Hospital with a temperature of 102.8° F., a pulse of 116, and respirations 22, perfectly conscious and rational. Four hours later he had become delirious and unconscious, his temperature being 103° F., pulse 132, and respiration 32. A bath brought the temperature down to 100° F., the pulse to 100, and the respiration to 22. Three hours after the bath his temperature was 100.8° F., pulse 90, and respiration to 20; and four hours later he was wildly delirious, his temperature having risen to 105.4° F., his pulse to 120, and his respirations to 30. After another bath his temperature fell to 96.4° F., and in spite of stimulation he died. The subnormal temperature does not seem sufficient to have caused death. It would seem that the cause which produced the wild delirium and unconsciousness, with the rapid heart action, caused his death, as a temperature of 103° or 105.4° F. would not be fatal. Moreover, the idea so often expressed that a temperature of 113° F. is necessarily and surely fatal is disproved by a patient in the Presbyterian Hospital, whose temperature rose to 115° F., and yet he recovered. That disease is produced when the normal glandular functions cease, or when abnormal

¹ Wood, *loc. cit.*

substances are produced, is self-evident, as is seen in myxedema, exophthalmic goiter, and tetany. If the excretory functions are also disturbed, as in nephritis, uremia, with its convulsions, is an everyday occurrence. Liebermeister's theory that the degenerations seen in fevers with high temperatures are caused by the temperature has long been given up, and it is now believed that the degenerations and temperatures are concomitant effects of the same cause.

Blood changes and petechial rashes, spoken of in the earlier part of this paper, as observed in the hyperpyrexial cases, were also present in the asphyxial form; that is, in patients whose temperature would not account for such changes. The blood-serum from the blood of some patients, when injected in only nine cubic centimeter doses, caused death in rabbits within an hour. I am convinced from my own experiments that normal human serum in such doses will not produce such effects. The urine of patients on admission was found to be markedly less toxic to animals than the urine of the same patients twenty-four to forty hours later, seeming to show a retention of toxic substances in the body at the time of the sunstroke. These experiments, however, are few in number and as yet not sufficiently controlled, but they are very striking.

The theory of auto-intoxication, with heat as a contributing cause, seems, therefore, to be as capable of explaining the symptoms of sunstroke and its sequelæ as the theory that heat alone is the cause. While my own experience last summer inclined me to think that there was something besides the effects of heat which was causing such terrible effects, there is still so much work to be done in the cellular pathology of all the viscera, and so many experiments to be made as to the effects of heat on the animal organism, and these effects studied by the new staining methods in vogue in cellular pathology, that it cannot be claimed that the auto-intoxication theory is as yet conclusively proved. Heat alone, however, does not seem sufficient to explain all the clinical and pathologic observations, while heat with the auto-intoxication of the body better explains the cause and effects of sunstroke.

Koch's New Tuberculin. — In M. Nocard's report on Koch's new tuberculin to the Paris Medical Academy, the Commission of Serums makes an exception in favor of the tuberculin on account of the scientific reputation of M. Koch and the impatience of sufferers to benefit by the proposed cure, and advises the Academy to permit its temporary use. If the usual custom of the Academy were followed the new tuberculin would not be accepted until clinical proof, or at least experiments, proved the assertions made in its behalf.

THE SURGICAL TREATMENT OF GRANULAR CONJUNCTIVITIS.

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PROFESSOR OF DISEASES OF THE EYE AND EAR, WISCONSIN COLLEGE OF PHYSICIANS AND SURGEONS.

THE important feature in all forms of treatment of granulations of the eyelids, whether surgical or otherwise, is to remove pathologic elements and to prevent further invasion of the same with their destructive consequences, with the least possible harm to the conjunctiva and lids. Without proper treatment we know that granulations will in many cases ruin eyes, and in others cause serious lesions, either by inducing ulcerative processes or, in the more favorable cases, by producing cicatricial contractions and deformities of the lids. In fact, a large percentage of these patients when they come for treatment have already suffered in same way or other from changes in the mobility or form of the eyelids. These complications, by the additional irritation they induce, further aggravate the unpleasant symptoms and not infrequently produce spasmodic contractions of the muscles of the lids, forming a serious obstacle to the successful treatment of the case. Therefore, often one of the first considerations in the surgical treatment is to remove such complications by proper operative measures. A canthotomy, in cases where this is indicated, on account of the powerful contractions of the orbicularis muscles, will give us the most valuable aid as a preliminary step to further treatment. Other abnormal conditions of mobility or shape of the lids can frequently be corrected with great advantage before proceeding far with the treatment proper.

The surgical treatment, to be of any advantage in the cure of granulated eyelids, must be of a conservative nature and must seek, as far as possible, to *protect* rather than *destroy* invaded portions of the conjunctiva and deeper tissues. We must, therefore, place as foremost of all surgical measures, the expression rather than excision of the pathologic elements in all cases where this can be done. By this means we may not completely succeed in removing all the granulations, but we will succeed in suitable cases if the operation is thoroughly done, as it ought to be, in removing most of them and at the same time in so stimulating absorption and physiologic tissue changes as to lead to a rapid cure of the condition, whether supplemented by further local applications or not. It is not to be forgotten that the ordinary remedies are applied, not with the idea of directly destroying the granulations but for the purpose of inducing that state of local hyperemia which most favors absorption, so that if we can by expression directly remove these deposits we gain valuable

time besides producing the same results physiologically that topical applications produce. Expression of granulations can be employed in all cases but is more especially adapted to the first stages of the disease before the deeper tissues are much involved. When severe inflammatory symptoms usher in the disease it is well to allay such inflammations before applying surgical measures of any kind.

A number of instruments have been devised for the purpose of expression, the most suitable of which are Knapp's roller forceps and Noyes' forceps. Another instrument which may be used with great advantage is the ordinary Desmearre's entropion lid forceps, which in many cases I prefer to other means. However, it is not the particular instrument which one may use in this operation, but it is the completeness with which the operation is done that cures the patient. Frequently expression can be successfully carried out by the use of the finger-nails. Friction, as applied by means of a brush or similar means sufficiently strong to tear the superficial capillaries and soft friable granular masses, without destroying the normal tissue fibers, has been extensively used in some quarters with great satisfaction. Grattage, or scratching by means of a stiff brush or a small metal rake, is a similar means but rather more severe, and ought to be used with care and discrimination. In the first stages of the disease it might do considerable harm by tearing and lacerating the conjunctiva, and, therefore, it is applicable only where there are exuberant and fleshy granulations covering the whole lids, rendering the conjunctiva so completely infiltrated and covered as not to be recognizable. Expression in such cases is frequently not sufficient, as we have here to deal largely with hyperplasia of tissue elements. The results obtained by friction or grattage, by tearing the superficial capillaries, as well as the softer pathologic elements, will cause local depletion and will greatly improve circulation and absorption. It is surprising how quickly thick, fleshy lids can be reduced in a few days by this means where it would take months by means of the ordinary topical stimulation. The good results of this procedure can be augmented by the additional use of antiseptics and astringents. In the more advanced stages of the disease, when deep deposits have taken place, especially at and in the fold of transmission, the venous circulation often becomes very sluggish owing to mechanic obstruction. Absorption under such circumstances is deficient and practically at a standstill. Neither expression nor grattage is fully capable of removing this condition of affairs. Thorough massage has produced good results, although this is not always sufficient. Through the thickening and stretching produced the conjunctiva be-

comes redundant, and the careful excision of the fold of transmission has been practised in such cases with decidedly satisfactory results.

A twofold indication is met in this way: In the first place we remove a large amount of infiltrated and objectionable tissue, and in the second, we destroy the overdilated and inactive blood-vessels and improve the local circulation and nutrition. It has been held that by means of excision of the fold, disagreeable contractions are liable to occur. This, however, is not the case if the excision is done in proper cases and correctly executed. It is desirable to excise as little as possible of the conjunctiva, and as this membrane is quite redundant in these cases no harm can come from this. The main object is to excise the subconjunctival tissue deep in the fold.

Galezowski is an ardent advocate of excision of the fold of transmission and does this as a routine practice in all advanced cases. In his experience he has had no unpleasant results following the operation. Special instruments have been devised for the purpose of excision, among which may be mentioned Galezowski's forceps.

Cauterization by the actual cautery has been practised to a limited extent and, in my opinion, cannot be considered a rational measure. It certainly offers no advantages over excision or grattage, besides being much more liable to leave hard and irregular cicatrices. The principle of electrolysis, which has been practised by different men with good results, would seem more conservative and therefore more applicable. I have had no experience with this method, nor do I believe that it can be made to answer the purpose as well as other means at our command. The operation of scarification of flabby granulations is, in my opinion, objectionable, as by its use we will necessarily sever and greatly injure the conjunctival covering without offering any advantage which cannot better be achieved by grattage. The use of massage, although not strictly a surgical measure, is one of great advantage in conjunction with the various other procedures. In cases in which the disease has run its course and has left behind large atrophic areas of the conjunctiva, or in which this has occurred through severe caustic or surgical treatment, transplantation of the conjunctiva of a rabbit to cover these defects might suggest itself. By thoroughly removing the overlying tissues it would appear simple enough to transplant healthy conjunctiva and give the globe a more acceptable protection.

Legacy for the Academy of Medicine of Paris.—The Academy of Medicine of Paris has received a legacy of 15,000 francs from Mme. Clarens for the foundation of an annual prize.

SKIAGRAPHIC DERMATITIS.

By J. Y. DALE, M.D.,
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A CASE of dermatitis presenting unusual features, which occurred subsequent to and was apparently caused by the use of an apparatus employed in taking skiagraphs, recently came under my observation.

On the 12th of last May Mr. T. was subjected, for experimental purposes, to the action of an X-ray tube working at a moderately high power. The tube was applied over the right portion of the umbilical region, unusually close to the body, being not more than two or three inches distant, and the exposure lasted about thirty minutes. No sensation whatever was experienced at the time, nor were there any unpleasant or unusual effects noticed for a period of twenty-eight days, when a scattered eruption of small, round, inflamed and slightly elevated papules made its appearance, and during two or three days these papules increased in number until the redness surrounding them coalesced into a continuous area of inflammation.

When the patient was first seen by me, June 17, 1897, there was an area of inflamed skin of an irregular oval shape about six inches long by four inches wide to the right of and including the umbilicus. It was swollen, purple in color, unhealthy in appearance, and the central portion, which was denuded of epidermis, discharged a creamy pus and contained several spots about an eighth of an inch in diameter where the true skin was eroded to perhaps half of its depth. The inflamed skin was entirely free from pain, and remained so throughout the whole course of the trouble, and there was only a slight tenderness on deep pressure. For three days, during the height of the inflammation, the central portion of the surface involved, which included the ulcerations, was thickened and noticeably elevated, and at that time there was a tendency to coldness of the extremities and general chilliness. These were the only constitutional symptoms which developed at any time. Under the use of mild antiseptic dressings the discharge ceased and the inflammation gradually subsided.

The points of especial interest in this case were the anesthesia of the affected skin, and the length of time that elapsed before the inflammatory process was apparent on the external surface. As there is no other way to account for this attack of dermatitis it is reasonable to believe that it resulted from exposure to the influence of the X-ray tube. This must have injured the sensory-nerve terminals, producing a localized anesthesia, so that the electrolysis of the deeper portion of the skin was followed by a

slow inflammatory process which escaped observation until the papular eruption showed itself.

It seems to be a common opinion among medical men that the dermatitis occasionally following the application of the X-rays is due to some irritating or poisonous property of the rays themselves, but this view is not generally held by electricians and physicists. In an article on the subject by Tesla in the *Electrical Review* of May 5, 1897, he suggests four possible causes of injury during exposure to an X-ray apparatus in action: (1) Ozone, which is produced in more or less abundance, and which has considerable power of destroying organic tissues. (2) Some kind of electric action resulting from rapid and innumerable changes in the electrostatic condition of the tube. (3) Heat (?). (4) The bombardment by innumerable infinitesimal particles hurled against the surface with almost infinite velocity. He is inclined to think that the lesion is the result of either the first or of the second of the above causes. He expressly states his belief that the last is the most satisfactory theory of the physics of the X-ray.

An evidence that the dermatitis in the case reported was not directly due to the X-rays is that the portion of skin which was injured most deeply was directly beneath a broad metallic fastener in the waistband of this gentleman's trousers, which would have arrested the X-rays, but which made a good conductor for electricity.

Mr. I. T. Osmond, Professor of Physics at the State College of Pennsylvania, has explained to me the harmful action of the X-ray tubes in this way: In considering what is the actual agent of injury it is necessary to remember that an X-ray tube in operation is a source of *several different forms of energy*. (a) There is an electrostatic field of rapidly alternating high potential currents emanating from or maintained by it. (b) There is the form of energy known as the cathode rays. (c) There is the form known as X-ray, so called because its real nature is not yet understood, and which may be electromagnetic. (d) There may be the energy of minute particles moving with incalculable speed. Tesla is of the opinion that under the action of the cathode rays there is a disintegration of the reflector plate, which hurls infinitesimal particles off in direct lines with inconceivable velocity. J. J. Thomson, an eminent English physicist, believes that the atoms of the so-called elements are broken up into the really elementary matter, while the studies of Elihu Thomson, a noted electrician of our own country, have led him independently to a similar view.

The following reasons may be given for believing that the X-ray energy is not the agent of injury: (1)

A rapidly alternating high potential electrostatic action will cause similar, if not identical, injuries, under conditions not productive of the X-ray form of energy. (Tesla.) (2) It is pretty well established that the intensity of X-ray energy is inversely as the square of distance from the source, while the power of the injurious agent does not appear to act according to such a law. For a given tube, excited to a given power, the region within which injury may occur seems to have a quite well-defined boundary, ceasing abruptly very much within the extent of strong X-ray energy. (Tesla.) (3) Tesla finds the liability to injury nearly or quite excluded by covering the exposed skin with a fluid (oil or vaselin) which will exclude the contact of air, while at the same time it is very transparent to the X-rays. (4) Again, Tesla finds that all danger of injury, even within sixteen inches of the extraordinarily highly excited tubes which he uses, is removed by placing a thin screen of sheet or gauze aluminum between the tube and person, the screen being well earthed. This screen does not offer very great obstruction to the X-ray energy, as is shown by the strong fluoroscopic or skiagraphic action beyond the screen. (5) The worst spots in these injuries sometimes are in places which the X-rays could not have reached; as before mentioned, the ulcers in the case reported were on a portion of the skin which, during the exposure, was covered by a metal clasp thick enough to prevent the passage of any X-rays.

So far as a conclusion may be drawn from studies and observations yet reported, it seems probable that the injury is due in some way to the rapidly alternating high potential electrostatic action. The electric discharge from the secondary terminals of an induction coil may be alternating, *i. e.*, in different directions successively, and either may be of equal energy in both directions, or of greater energy in one than in the other; oscillatory, as a special kind of alternating; or all in one direction. Even if this action is strictly alternating (as distinguished from fluctuations of intensity of one character), either the intensities of opposite character, positive and negative, may not be equal, leaving a resultant electrolysis from the currents during the changes of states, or if the intensities are equal, and consequently the currents during opposite changes equal, so that the resultant electrolysis is chemically zero, the physiologic functions of the tissues may be destroyed. On the other hand this rapid and great change of electrical state may kill tissues by some other than electrolytic action.

In regard to the method to be pursued in preventing damage to the skin in using X-rays, it may be stated that tubes worked at low power (small coils

and little voltage on the primary) can only produce injury, if at all, by close and very protracted exposures. Very few persons possess the necessary conditions for using the tubes at the extraordinarily high power employed by Tesla.

For tubes used at what may be called ordinary high power, which are actuated by the larger coils coming into more general use, the following rule should be observed: (1) The tube must never be nearer to the body than twelve inches for an exposure of 10 or 15 minutes; and if the tube is highly excited, it is better to increase the distance even if a longer exposure should be required. (2) Tesla's suggestion of covering the skin with some fluid to exclude the contact of air or ozone, may be found valuable. (3) If the tube is sufficiently excited to work at a distance of 15 or 16 inches from the person, with a well-earthed screen of aluminum gauze intervening, absolute security from injury is obtained.

CLINICAL MEMORANDUM.

A CASE OF RENAL HEMOPHILIA.

By WILLIAM J. ROBINSON, M.D.,
OF NEW YORK.

ALTHOUGH hemophilia was known as a distinct disease as early as the twelfth century, and in spite of the fact that during the last fifty years much has been written about it, notably by Virchow, Nasse, Legg, Grandidier, and Simon, we are still in complete darkness as to its pathology and morbid anatomy. Of the numerous theories which from time to time have been offered in explanation of its cause, the following three have met with the widest acceptance: (1) That it is due to an abnormal fragility of the blood-vessels; (2) to an absence of one of the ferments, which effects the coagulation of the blood; (3) to deficient innervation of the capillaries, with consequent abnormal dilatation. But these theories still are mere hypotheses unsupported by facts. As Grandidier puts it, "hemophilia is the most hereditary of all diseases," and, unfortunately, we know as little regarding its treatment as its etiology. Taking into consideration the rarity of the disease, especially of the renal variety, no apology is needed for reporting the following unique case:

Arthur B., four years old, born in this country of Finnish parents, had been passing blood in his urine for about ten days. The mother had consulted her family physician, and had visited two or three dispensaries, but with no relief, the blood becoming more profuse with each urination. At one dispensary she was advised to have the boy circumcised, he having a long and tight prepuce, but this she did not consent to, thus probably saving the child from what might have proved in his case a fatal operation. When I was called in I found the boy playing on the floor with his little brother. He seemed to be completely exsanguinated; his general appearance was as if he were made out of spermaceti, the skin being smooth and glossy

white. His hair, eyebrows, and eyelashes, resembled those of an albino (his two brothers present the same appearance in every particular). His pulse was thready and 140 per minute, and his temperature was 97.9° F. The boy felt quite well and was not complaining. Only occasionally, on passing a blood-clot, he would cry out with pain. There was no history of traumatism.

A thorough examination failed to reveal anything beyond a tenderness over the region of the left kidney. He passed in my presence a pint and two ounces of dark, bloody urine, and floating in it were two long, thin blood-clots. Upon standing the blood all collected at the bottom of the jar, leaving the supranatant urine quite clear. I injected a pint of hot boric-acid solution into his bladder and the liquid came away perfectly colorless. I gave strict orders not to allow the boy to move from his bed, and prescribed powders of one-tenth of a grain of opium and three grains of gallic-acid, one powder to be taken every three hours. I was positive that the hemorrhage was of renal origin, but was completely in the dark as to its cause. This uncertainty cleared away sooner than I expected. About four hours after I left him he was taken with a severe hemorrhage, and became faint. I was sent for in a hurry, and found him in collapse. I administered, hypodermically, my favorite stimulant combination—digitalis, camphor, and ether—to which he responded nicely, but my surprise was very great to find at the point of the insertion of the needle an obstinate, uncontrollable oozing of blood. Compression with the fingers for about five minutes, as well as the application of tannin, cocain, and Monsel's solution was ineffective in checking the hemorrhage. A pledget of cotton, saturated in a solution of equal parts of antipyrin and tincture of ferric chlorid, secured by a tight bandage, after about forty-five minutes of effort, finally stopped it. I knew then that I had to deal with a case of hemophilia.

I began to make inquiries, and the information obtained corroborated my diagnosis. The mother presented nothing abnormal, except rather profuse menstruation, which always lasted from seven to nine days. Her father had died at the age of thirty-five from pulmonary hemorrhages and epistaxis—from consumption, she said, but the description pointed unmistakably to hemophilia. Her first child was born at the end of the seventh month and died when a few days old from exhaustion, due to a severe hemorrhage from the umbilicus. The mother did not know that she belonged to a bleeder family. I instituted the following treatment: A large ice-bag was kept continuously over the region of the left kidney, one grain of sodium sulphate was given every hour, and a dram of the following mixture every four hours:

R Hydrastinin hydrochlor.	.	gr. iv
Ergotole	.	ss
Tr. opii deodor.	.	ss
Glycerin	.	℥i
Aq. menth. pip.	.	q.s. ad ℥iii.

The diet was confined to milk and vichy and soft boiled eggs. The next day the boy had another slight hemorrhage—and that was the last one. For two or three days afterward the urine was very slightly tinged with

blood. After a few days had passed without a trace of blood appearing in the urine, I began to administer iron (liq. ferri mangan. pepton., a teaspoonful in milk twice daily) and tonics, and the boy made a surprisingly rapid recovery. He is now quite well and has had no recurrence (a year has elapsed since his first attack). He is still taking (interruptedly) sodium sulphate, hydrastis, and ergot, and also a preparation of iron. He now has considerable color in his cheeks.

The only other case of renal hemophilia which has ever come under my notice was in Professor Leyden's clinic, at the Charité, Berlin. A man was brought into the hospital in a condition of shock. After regaining consciousness, he said that he was taken with a sudden pain in the side, and on going into a public toilet room, he passed what he thought must have been two liters of blood from the bladder. In the hospital he passed that same day about 1½ liters (three pints) of dark, bloody urine. He was twenty-six years old, and said that he had such attacks every two or three years. He once had pricked his ear with a needle, and it took two physicians several hours to control the bleeding. A brother of his was taken with a frightful hemorrhage from the rectum during defecation and expired before medical aid could be summoned.

MEDICAL PROGRESS.

Anesthetization of Children.—ROWELL (*Lancet*, May 15, 1897) who has had an extensive experience in administering anesthetics, has found that with children he obtains the best results from the use of the A. C. E. mixture, followed by ether, given by the open method throughout. He begins with a small mask, and with the patient lying on the side. The A. C. E. mixture is dropped slowly upon the mask so that it takes one minute for the whole surface to become wet. When respiration has become fairly free, Rendle's mask, containing a sponge, upon which one-half to two drams of the A. C. E. mixture has just been poured, is quickly substituted for the open mask. As the vapor from this mask is stronger than that which the child obtained before, there may be a little straining or coughing. This is relieved by lifting the mask slightly from the face. When the breathing is again free, from one to three drams of ether is poured upon the sponge, and when the child has become accustomed to this, a fresh, dry sponge, upon which from two to four drams of pure ether has been poured, is substituted for the mask. As soon as the child breathes this freely he is ready for operation. The time required altogether is only three or four minutes, and throughout the process the respirations are an accurate guide to the child's condition.

In the case of children who scream and fight, Rowell uses the Rendle mask from the start, holding it close to the face. As soon as the child has ceased crying, the mask must be removed and two or three breaths of pure air allowed. The occurrence of lung trouble, after the administration of ether in children, is almost absolutely preventable by keeping the child in a thoroughly warm room for some hours after the operation. In an experience with nearly 800 cases, in which the anesthetic was

administered by the method above described, no dangerous symptom was observed. Occasionally the symptoms of an over-dose were present, but with proper attention to the patient, even these should never occur.

To Determine the Death of the Fetus.—KNAPP has shown that the death of the fetus, is accompanied by the appearance of acetone in the urine of the mother. This may easily be demonstrated according to *La Presse Med.*, May 22, 1897, by the fuchsin test of Chautard. A solution of fuchsin, 1 to 2000, is decolorized by sulphuric acid. To make the test, half an ounce of urine is poured into a test tube, and a few drops of the fuchsin solution added. If acetone is present, the color of the urine becomes violet, the depth of color depending on the amount of acetone. This simple test is within the reach of every practitioner.

The Hand as a Tampon and Dilator in Placenta Previa.—MYERS, in the *Medical and Surgical Reporter* of May 15, 1897, has found the hand a most successful tampon in cases of placenta previa. If well oiled, it can be introduced without an anesthetic into the vagina, and one finger after another can be passed into the cervix until its dilation is complete, but once in position, the hand must be kept there until labor is terminated, even though some hours intervene.

THERAPEUTIC NOTES.

Erysipelas Treated by Guaiacol.—WAGON (*Gazette Heb. de Med. et de Chir.*, May 23, 1897) has had excellent results from the use of guaiacol in erysipelas. From fifteen to thirty minims of the drug are painted on the affected surface once or twice a day. The temperature falls sometimes as much as four degrees in two hours, the remissions being more striking toward the end of the malady. The fever curve ascends two to four hours later, but there is evidently a permanent as well as temporary effect of the guaiacol.

Aside from its action on the temperature, guaiacol improves the general condition of the patient. The delirium disappears, and the headache, anorexia, and coated tongue, all show changes for the better. Pain is lessened, and restlessness improves with the improvement in the patient's other symptoms. If the drop in the temperature is too great, there is a sensation of great cold accompanied by pallor, profuse sweating, and weak pulse. In the fever which follows this too great depression of the temperature, the patient may expire; but if the dose does not exceed that indicated, the danger of such an unfortunate result is a slight one. Nevertheless, it is beyond dispute that guaiacol is a most powerful remedy, and one which demands on the part of the physician employing it a corresponding degree of watchfulness and caution.

The Therapeutic Value of Ozone.—GESSLER (*Weiner. Med. Blät.*, May 20, 1897) has found the inhalation of ozonized air to have a powerful therapeutic influence. He used an apparatus made by Labbé and Oudin, which was arranged so that each liter (quart) of air contained about

0.10 mg. of ozone. The patients took these inhalations in daily doses, increasing from five minutes to half an hour.

The cases in which this treatment has been used are: (1) In primary and secondary anemia of the severe type; (2) in diabetes mellitus; (3) in tuberculosis of the lungs in different stages; (4) in old cases of pleuritis with adhesions. The best results were obtained in the cases of anemia and phthisis. Of the latter, eight cases, in which the lesion was not pronounced, were much improved by the inhalation. Of twenty-two patients in moderate and advanced stages of the disease, nine died; three were improved so that they might be pronounced cured. Of the remaining thirteen, two were well after 1½ years, and the rest experienced a certain amount of improvement. Examinations for bacilli were regularly made, and it was found that the ozone has an antibacterial action as well as a favorable one upon blood formation. As the effect of the ozone, however, is only temporary, patients ought to receive this treatment continuously. Naturally, dietetic and hygienic measures are also to be instituted.

Tincture of Benzoin for the Itch.—DE HOLSTEIN recommends in cases of itch, friction of the affected parts with tincture of benzoin. In two cases in which it was used the eruption began to subside after the first application, and two days later the patients took baths and were cured. It is possible that the alcohol contained in the tincture deserves a part of the credit for the result, for it could act not only directly but also by opening the crevices in the skin, thus facilitating the entrance of the benzoin into the burrows of the itch insects.

Aseptic Treatment of Burns.—LUTAUD (*Jour. de Med. de Paris*, May 23, 1897) rejects most of the old remedies for burns, on the ground that they are not aseptic. He retains the following:

℞ Sweet almond oil	12 parts
Lime water	2 parts
Salol	1 part.

This mixture, however, is not thick enough to allow of its being applied at the end of the treatment when one wishes to produce a drying up of the burned surface, and, besides, the salol is not dissolved. For these reasons he prefers the following:

℞ Carbolyzed glycerin } aa	5 i
Sweet almond oil	
The yolks of fresh eggs	No. 2.

When this mixture is beaten up it makes a sort of mayonnaise of the proper consistency, and is rendered antiseptic by the carbolic acid. Its application does not cause any pain, even upon the most sensitive surfaces; on the contrary it is itself analgesic. With a forceps this salve is applied to the parts where the epithelium has been lost, and upon the burns of the third degree, and then over the whole bismuth powder is scattered. This dressing is left in place for two or three days, and is then renewed. The results have been most satisfactory. In extensive burns of the third degree, Lutaud has been able to obtain in two or three weeks a complete healing, and that without any cicatricial contraction.

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CHRISTIAN SCIENCE.

OUR attention has lately been attracted to the practical bearing of this cult upon the welfare of the community by several sad occurrences. Some of these incidents are known through personal professional attendance, others through an equally personal and intimate non-professional acquaintance. The first case to be observed was that of a middle-aged woman who had led a life of much hardship, who had been an ardent disciple of Christian Science, and who had spent much of her earnings in the support of "the cause." For a year she had shown some mental alienation; had spent hours writing incoherent messages from spirits or equally incoherent letters to relatives in which the dead and the living were referred to without discrimination; had delusions of grandeur, in that she believed herself to be the medium of communication of a spiritual edict of supreme importance; and she finally developed acute mania, a few days before the time when a settlement of business matters would have left her in a position to enjoy life after her protracted struggle, and to be of comfort and assistance to other members of her family.

The second case was that of a woman of culture who, with her husband and sister, became converts to Christian Science. Shortly after visiting a friend who was dying of gastric cancer, and whom she had tried to persuade to discharge her physician and declare herself well, she was herself seized with symptoms of the same malady. After an ineffectual attempt to "throw off the thought of sickness," a healer was summoned. During the first visit of the latter, she had a sharp hematemesis which he declared to be the visible sign of the dismissal of the disease. Finally, after weeks of suffering, friends interfered and secured the attendance of a physician, who did the only thing possible—relieved her of pain.

The third case was that of a middle-aged man whose wife was a prominent "Scientist," and who, on that account, failed to receive prompt medical treatment for a complication of liver and kidney degeneration. It certainly would be unfair to say that his life was sacrificed to Christian Science, but it is an open question whether it might not have been prolonged for several useful years.

The fourth case was that of a woman, herself a Christian Scientist, and under the influence of the wife of the man referred to above, who kept up her household duties until actually overcome by physical weakness. Relatives insisted on calling a physician, who found the patient pulseless, with advanced double pneumonia, and already in *articulo mortis*. The "Scientist," of course, ascribed death to the neighborly interference.

The fifth case was that of a young man who made a gallant and prolonged fight against multiple tuberculosis, under the auspices, in turn, of homeopathy, Christian Science, and a patent medicine said to contain sulphuric acid, and advertised as the insuperable foe of all bacteria. Death finally occurred during the reign of homeopathy, but when the vital powers were so reduced that no means of treatment would have been of avail. Judging from the resistance made to the disease, it seems that proper and continued treatment might have saved his life if he had not been under the control of "Scientists."

These are not as incisive arguments against the cult of Christian Science as the accounts frequently appearing in the daily press of deaths due to acute causes occurring under the responsibility of healers, when the opportunity of medical aid has been refused either

by the patient or his immediate relatives, but they indicate the same tendencies in a stratum of society in which the demands of custom for the pretense at least of medical attendance, can scarcely be resisted to the last. Indeed, the concession of Christian Science to regular professional practice in these cases has only been to avoid the odium of a coroner's investigation and divide the responsibility of death.

Christian Science is one of the most insidious enemies with which legal medicine has to contend. Ordinary laws regulating the practice of medicine can scarcely be construed to apply to those who declare publicly that they are most distinctly not giving medicinal or even medical treatment. With specious claims to literal truthfulness, the Christian Scientists can claim that they are carrying into practice what every member of any Christian sect and of many other religious bodies, accepts as dogmatically correct. It is impossible to require by law the attendance of a regularly qualified medical man on any particular case. In a general way, necessary medical care is required of those responsible for the welfare of the patient, but it is impossible to lay down practicable rules regarding the degree of physical or mental disability which shall make the calling of a physician imperative. Neither is it within the power of the law to prescribe the qualification of any particular physician or of his school of practice. It is manifestly impossible to discriminate against a school of medicine in good legal and ethical standing, or to go within the limits of any school of practice and endorse certain ideas and condemn others.

Christian Science has its roots in that element of society from which all similar fads derive support. Its advocates are persons of considerable social influence, of good moral character—too good to appear compatible with deeds of inhumanity and tendencies toward murder—of leisure for proselyting. Such persons can not be alluded to as ignorant and uneducated, yet we usually find them superficial in knowledge and comparatively untrained in intellect. They are just the ones who can be convinced by sophistry, and who cannot follow a truly logical mind in the exposure of fallacy. In the event of insanity, or of moral obliquity or foolish conduct, such as hardly warrants the thought of restraint, the question naturally occurs to every fair-minded person, how much is Christian Science the cause and

how much the result of mental unbalancing? We believe that no general answer can be given to this question; that each case must be judged by its particular features. We would, however, assert that in the majority of such instances, Christian Science has acted as an exciting cause and has determined the development of actual insanity, or of serious loss of the reasoning power, in persons who would otherwise be merely incapable of the highest logic, or who would appear slightly below par intellectually.

A NEW RESPONSIBILITY FOR THE MEDICAL PROFESSION.

It is now a generally accepted fact that the bicycle as a means of securing necessary exercise has received the endorsement of the medical profession. Not only do the members of the profession recommend it to their patients as a remedial agent, but they have themselves adopted it as a means of recreation and exercise. This fact seems to have appealed powerfully to the laity, and all remonstrances against riding the wheel in cases in which it is contraindicated are met with the all-satisfying argument that the doctors all recommend it, and the insinuation is that he who does not is behind the times.

In creating and sustaining this universal opinion of approval, the medical profession has assumed to a certain degree the moral responsibility of keeping bicycling within healthful limits. The use of the wheel instead of affording a pleasurable, beneficial exercise, is rapidly degenerating into what gives promises of becoming, if not promptly checked, a great physical abuse.

Every new time-saving invention adds additional strain to the nervous system. The motorman on the trolley line, or the gripman on the cable-car, does not require the same amount of muscular power as the driver of a horse-car, but the increased speed and the constant alertness in avoiding accidents engendered thereby require a higher order of talent and a more sensitive nervous system. The bicycle is no exception to this rule. While in cases of neurasthenia it acts as one of the best remedial agents, when properly used, in diverting the strain from the nervous system and affording exercise to the muscles, thereby equalizing the circulation and nutrition, when carried to the extreme of a century run or a twenty-mile race, it brings such a strain upon the nerve-centers as

to place the latter in danger of total wreck. The man who comes out victorious in a twenty-yard dash or a twenty-mile bicycle race is not the man of tremendous muscle, but one who has his nervous apparatus so thoroughly trained that in the one case he can throw all his power into an almost momentary effort, and, in the second, can set his motor machinery at a certain pace and hold it there with the regularity of a clock throughout the requisite time. This abnormal strain upon the nervous system is the dangerous element in the use of the bicycle. No one who witnessed the twenty-mile bicycle race at Manhattan Beach on Saturday last could restrain his admiration for the careful training and wonderful nerve of the victor, who was able to maintain a two-minute pace for twenty miles; but to the careful observer there was steadily growing, with every lap of the course, in the expression of the rider's face, the protruding, glassy eye, the drawn features, the gaping mouth, which indicate an intense strain and has come to be recognized as the "bicycle face." No organism can endure such over-exertion with impunity. A penalty commensurate with the crime must be paid sooner or later. The less fortunate competitor in this race received his warning promptly and retired from the course at the end of the sixth mile with a stitch in his side.

A still greater abuse, because it is indulged in by a greater number of people, is the so-called "century run," and the still later innovation of the "double century," which was recently undertaken by forty-six riders from New York, thirty-five of whom accomplished the two hundred miles in twenty-three hours. Against such suicidal feats, it becomes the duty of the profession to speak with no uncertain voice.

Professional athletes, whose business it is to develop their muscular and nervous systems for extraordinary feats, are not the proper guides for the great mass of bicycle riders. The latter are composed of professional people and the great class of in-door workers of manifold callings. In them the muscles are soft and flabby, the heart unused to prolonged exercise, and the nervous system already tired from close application. To them, when properly used, the bicycle proves an unalloyed blessing. The exercise it affords appeals to a goodly number of muscles and to all the senses. The mind is diverted by

the constantly changing scenes and sights, the delights of comradeship are begotten, and the invigorating sense of the bounding pulse of full animal life and power is experienced. But the exercise should not be carried so far as to interfere with a proper, healthful reaction; and this should be free from all sense of exhaustion.

ECHOES AND NEWS.

New Use for the Roentgen Ray.—It is reported that in France the Röntgen ray is employed to detect smuggled goods upon the persons of suspected individuals.

A Johns Hopkins University Appointment.—The trustees of the Johns Hopkins University have appointed Dr. John M. T. Finney to be associate professor of surgery.

The Association of Military Surgeons.—The eighth annual meeting of the Association of Military Surgeons of the United States will be held in Kansas City, Mo., June 1, 2, and 3, 1898.

A Statue to Pirogof.—A statue to the eminent surgeon Pirogof will be unveiled at Moscow during the meeting of the International Medical Congress. It is the work of the sculptor, Mr. V. R. Sherwood.

Drs. Munde and Da Costa Honored.—Dr. Paul F. Mundé of New York has received the honorary title of LL.D. from Dartmouth College. The honorary degree of LL.D. has been conferred also by Harvard University upon Dr. J. M. Da Costa of Philadelphia.

Autopsy on a Bridge-jumper.—The autopsy made at the Brooklyn morgue upon the body of Keeble, who lost his life in jumping from the Brooklyn Bridge, showed that death was due to drowning. With the exception of three ribs, no bones were broken.

The Hull Biological Laboratories.—The Hull Biological Laboratories of the University of Chicago were formally dedicated on the 2d inst. The address was made by Professor William H. Welch of Johns Hopkins University. The subject was "Biology and Medicine."

A Hospital for the Medical Department of the University of Iowa.—The Board of Regents of the University of the State of Iowa has appropriated nearly \$150,000 for the construction and equipment of a hospital in connection with the Medical Department of the University.

The American Association of Obstetricians and Gynecologists.—The tenth annual meeting of the American Association of Obstetricians and Gynecologists will be held at the Cataract House, Niagara Falls, Tuesday, Wednesday, Thursday, and Friday, August 17, 18, 19, and 20, 1897.

Delegates to the Montreal Meeting.—Dr. Frederick Holme Wiggin of New York City has been appointed by the New York State Medical Association, and Dr. J. Riddle Goffe by the American Gynecological Society as delegates to

British Medical Association meeting at Montreal, August 31 to September 3, 1897.

International Congress at Moscow.—The "Oto-Rhino-Laryngological Society of Moscow" will open an information bureau in the Doctors' Club (Bolshaya Dmitroffka), and in Section XII. during the meetings, for the convenience of members of that section attending the International Medical Congress at Moscow.

The Prince of Wales' Hospital Fund.—A letter in the London *Times* asks for more subscriptions to this fund. The annual subscriptions at present consist of \$100,000, contributed by less than 5000 households, instead of \$562,500 contributed by 225,000 households, as expected. The deficiency is attributed to lack of thought, rather than to lack of means.

Attorneys for State Hospitals.—Last winter a law was passed by the New York State Legislature providing for the appointment of an attorney for every State hospital. Heretofore all legal work has been done by the Attorney-General's department. The Lunacy Commission has lately announced its selection of hospital attorneys, all of whom are to receive a salary of \$1200 per annum.

Railway Fares and the British Medical Association Meeting.—The Canadian Pacific Railway Company will issue first-class return tickets to members of the British Medical Association from Toronto to the Pacific Coast, at a rate varying between \$61.80 and \$70.30, according to the route selected. This is less than a single fare and the tickets are available from July 1st to October 1st.

Scarlet-Fever Germs in Plunder.—News comes from Bloomfield, N. J., that thieves recently entered the yard of a dwelling in Montclair and stole a quantity of clothing and bedding which had been placed there. Fears are entertained lest this may be the means of causing a small epidemic, for the clothing and bedding had been used by a scarlet-fever patient, and were to have been burned.

She Rides a Cycle at Three.—Birmingham, Ala., claims to have the youngest cyclist in the United States in the person of a three-year-old girl. She began to ride when she was only two years and five months old, and in a month rode well. The wheel she rides is just fourteen inches high, and was made especially for her. The child's baby sister is to be taught to ride when she is two years of age. Comment is unnecessary.

Board of Education and Oculists.—The Board of Education of the City of New York has adopted a resolution providing for the employment of oculists to report upon the best colors to be used in painting and decorating school-rooms with reference to their effects on the eyesight of children. Drs. Chas. Stedman Bull, Henry D. Noyes, and Emil Gruning have been selected to act in this capacity.

Dual Mentality.—An unusual case of dual mentality has been reported by Dr. William A. White of the State Insane Asylum at Binghamton, N. Y., the subject being a girl of thirteen suffering from acute hysteria. The patient

was shown at a recent meeting of the Broome County Medical Society, and experiments were made demonstrating the dual condition of the mind and the existence of a sub-conscious state.

Final Decision in the Fayerweather Will Case.—On July 6th the Supreme Court of New York State issued its final decision in the Fayerweather will case. The executors were required to distribute within ten days the three million dollars in question to the twenty colleges to which they were bequeathed. The various hospitals that were hopeful of recognition under the will are, therefore, debarred from all participation in the benefits of this great fortune.

Military Surgeons of New Jersey Meet.—The annual meeting and dinner of the Order of Military Surgeons of New Jersey was held on the 15th inst. at the club house of the New Jersey State Rifle Association. The following officers were elected: President, Major William J. Parker, Fourth regiment; vice-president, Major H. C. H. Herold of Newark; secretary, Major David Strock, Sixth regiment; treasurer, Captain Roy Inglis, Hospital and Ambulance Corps.

Plague in Hawaii.—The report comes from Washington that there is danger of the bubonic plague being introduced into Hawaii from Japan, where the disease has been carried from its latest colonial acquisition, Formosa. The United States has been warned that its assistance will be required to prevent the landing of infected Japanese, if their demand for admission to Honolulu is enforced by a display of arms such as has just been threatened, and special instructions have been cabled the American sanitary officers in Japanese ports.

Practical Results of Koch's Rinderpest Inoculation.—It is stated by the secretary of the Pretoria Agricultural Society that Professor Koch's results are better than they are said to be. In hundreds of cases the method has been carried out successfully, and the failures which have occurred are due to the impossibility of making the ignorant Boer carry out instructions. He does not think, however, that it is possible to stamp out the disease by this method, as it is impossible to inoculate the hundred thousands of cattle belonging to the natives in isolated districts in various parts of the country. Moreover, he says that the disease is carried from farm to farm by the aasvogel, a species of vulture, which feeds upon the carcasses.

Cowardice of Greek Army Doctors.—Dr. S. C. Zavitziano was sent to Constantinople some months ago as a delegate from the United States to the International Sanitary Commission, and subsequently, at the request of the Marine Hospital Service, traveled through Greece to investigate the treatment received by the Greeks who were wounded in the war with Turkey. He declares that the Greek Red Cross has not been of any assistance, and the same is practically true of the sanitary service of the Greek army. To substantiate his charge of cowardice, he says that the hospitals of Larissa and Tirnova, two of the five hospitals for wounded established at the beginning of the war, were abandoned to the Turks by the physicians. The excuse

offered was that the Turkish army had fired on the Red Cross Hospital at Arta.

Photographing the Stomach.—Dr. Edward O. Schaaf of Newark has invented an electric light and camera for photographing the interior of the stomach. The invention is intended to assist in diagnosing obscure ailments, such as cancer of the stomach. He states that two weeks ago he was able to successfully photograph the interior of the stomach in a living person, and obtained a perfect picture of the pyloric mucous membrane. The great difficulty is in properly focusing the membrane. In the experiments upon dogs anesthetics were used, but the pictures obtained were unsatisfactory. The explanation of this lay in the movements of the stomach. The organ ascended and descended with the diaphragm at each expiration and inspiration. This trouble was overcome when the camera was introduced into the human subject, the patient holding his breath during the exposure of the film. No narcotics are required in individuals, there being no pain connected with the operation. Only five to eight-seconds' exposure to the electric light is necessary, and for this length of time a patient can easily suspend respiration.

Diamond Jubilee Honors.—Among the medical men upon whom jubilee honors have been conferred are the presidents of four large institutions. A baronetcy was conferred on Dr. Samuel Wilks, President of the Royal College of Physicians of England, who has long been known as one of the founders of pathology. A baronetcy was also conferred on Sir William MacCormac, President of the Royal College of Surgeons of England, who was knighted in 1881 in recognition of his services as Secretary-General of the International Medical Congress of that year. The honor of knighthood was conferred on Dr. George F. Duffey, President of the Royal College of Physicians in Ireland, in which he now holds the Chair of Pharmacy as well as that of *Materia Medica*. Mr. William Thomson, President of the Royal College of Surgeons in Ireland, was also knighted. He was the first Secretary-General of the Royal Academy of Medicine in Ireland and held office fourteen years. The honor of a baronetcy was conferred on Mr. Thomas Smith, Surgeon-Extraordinary to the Queen, who is senior surgeon to St. Bartholomew's Hospital, with which he has long been connected. Dr. William Gowers, upon whom knighthood was also conferred, is well known as an investigator of the nervous system whose writings are familiar to physicians all over the world. Dr. Felix Semon was knighted also in recognition of his labors in extending the application of a special knowledge of laryngology by physiologic and clinical investigations. Dr. Thorne-Thorne, C.B., was promoted to be a Knight Commander of the Most Honorable Order of the Bath (civil division). He is lecturer on Public Health at St. Bartholomew's Hospital, where he received his medical education. And Dr. W. M. Haffkine was appointed a Companion of the Order of the Indian Empire in recognition of his well-known labors in India for the prevention of cholera and plague by inoculation.

CORRESPONDENCE.

THE WOODBRIDGE TREATMENT OF TYPHOID FEVER.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In the abstract of Dr. Upshur's paper in your issue of June 5th ult. these words appear: "The testimonials which had been filed regarding the efficacy of the treatment ('Woodbridge's method') were of no more value than similar testimonials for some 'cancer cure' or 'kidney cure,' and other 'cures' *sui generis*." The testimonials given out by shameless "cancer and kidney" quacks are the endorsements of their ignorant and deluded victims, generally paid for in service or with salve, and are usually wheedled out of them after a short term of treatment, while they imagine themselves improving and are often published after the giver is in his grave. What are the "testimonials" which Dr. Upshur says are of no more value than these? In 1893, after twelve years of experience which had taught me that typhoid fever *could* be aborted, I made the announcement which was in conflict with all recognized teaching, and published the method which, according to the most advanced thought of the best thinkers, was irrational and unscientific, hence my theories were received with sharp criticism, with positive dissent, and sometimes with violent personal abuse. But a few hundred physicians were possessed of sufficient intelligence to realize that no sane man would promulgate ideas which were certain to be bitterly antagonized until he was absolutely sure that his position was impregnable, and they wrote to me for exact and definite instructions and followed them, and they were soon so amazed at the results which were obtained that they began writing to me in most eulogistic terms of their success, sending me clinical charts and reports of cases. At the last meeting of the Ohio State Medical Society, held in this city, I presented a paper of about 150 pages of closely typewritten brief quotations from these laudatory reports, many of which were accompanied by clinical charts of the cases. The reports included every case and every death as far as I knew which had been treated by the method I have advised, or any modification of it, and dealt with 5449 cases treated, with 105 deaths. Since I read that paper, on May 21st, I have received more than two hundred letters reporting 2408 additional cases treated, with 45 deaths. The record now stands, therefore, at 7857 cases of typhoid fever treated, with 150 deaths, a death-rate of 1.90 per cent., and an average duration of illness in the 4935 cases in which it was given of 12.7 days.

The clinical charts or histories show the most careful and painstaking observations, and that every procedure known to science was called into requisition to verify the clinical diagnoses, and that every possible effort was made to exclude errors of this sort and of judgment. They show that hundreds of cases were treated in hospitals and were carefully watched by different physicians, and that the treatment was instituted in hundreds of cases in which the patient recovered after other methods had

failed, and in many after the patients were considered beyond all human help. It is these reports of cases and the expression of these most highly commendatory opinions which have been based upon the bedside experiences of hundreds of physicians, including many men of the highest social and professional standing, that Dr. Upshur stigmatizes as "testimonials of no value, etc.," and compares with the endorsements given to quack salvers.

Dr. Upshur says he has not used this method of treating typhoid fever, which he severely arraigned, "because he regarded his patients as of too much consequence to be subjected to such dangers." That is, he considers them of "too much consequence" to apply a method of treatment which has resulted in saving all but 1.90 per cent. of the 7857 cases in which it has been tried, besides saving their constitutions the strain of protracted and severe illness, but they are not of too much consequence to be subjected to "symptomatic or expectant" treatment, with its death-rate of fifteen to twenty per cent. and its six-weeks' duration of illness, or for him to sanction "small doses" of always deleterious and generally dangerous phanacetin!

Yours truly,

JOHN ELIOT WOODBRIDGE.

CLEVELAND, Ohio, July 9, 1897.

A REPLY TO DR. LEFFINGWELL.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: I have read with much interest the letter of Albert Leffingwell, M.D., in which he criticises your editorial of July 3rd on the bill before Congress restricting animal experimentation in the District of Columbia. It is astonishing to me that any man who values his reputation for intelligence, candor, and carefulness of statement, can make the assertions contained in his letter. He pretends that he would view with disfavor any bill destined to prevent all animal experimentation, and yet we find him associating with, assisting and the chief exponent of those whose object and constant effort is to secure the prohibition of such experimentation.

Dr. Leffingwell says of this bill: "I do not believe that if it becomes a law, it will, in the slightest degree impede any form or phase of useful investigation." The president of the Washington Humane Society could devoutly turn his eyes to Heaven and say the same thing, even though he knew the bill would absolutely abolish vivisection, because he holds that *no form or phase of vivisection is of any practical value to science or medicine.*

Let us see if Dr. Leffingwell's assertions concerning the effect of this bill are borne out by an examination of the text of the bill. He says:

"It now permits all phases of inoculation experiments, all tests of drugs, of poisons, or of methods of surgical procedure. Does it? What does this general provision in Sec. 2 mean? "The experiment must be performed with a view to the advancement by new discovery of physiologic knowledge, or of knowledge which will be useful for saving or prolonging life or alleviating suffering." What proportion of the experiments are made

with a view to *new discovery*, and what proportion are made to confirm discoveries already made or to apply them under variable conditions? In my opinion, and I have had nearly twenty-years' experience with this class of experimentation, this one little paragraph would, if strictly construed, cut off nine-tenths of the useful experiments which are made upon animals. Senator Gallinger, who fathers the bill in the Senate, says this paragraph will not bear this limited construction, but if it does not, why was it put in the bill? It is a principle of law that everything in a law was put there for a purpose. As a matter of fact, the paragraph in question is taken literally from the British antivivisection bill. The framers of that bill believed it would have the full effect which its wording implies, and they inserted another paragraph specifically permitting experiments to test former alleged discoveries. Why was that paragraph left out of the bill which Dr. Leffingwell helped to perfect? Is not the British bill sufficiently harassing and destructive to experimental research?

This bill lays down a number of general conditions according to which experiments may be made, and prohibits all other forms of experiments. These conditions are so shrewdly formulated that, while superficially they do not appear very harmful, the practical experimenter can see that there are very few lines of research which could be carried to successful completion without violating some provision of the bill. For instance, we could not carry out ingestion experiments, inspiration experiments, co-habitation experiments, or exposure experiments, with a view of transmitting a contagious disease and determining the conditions under which the contagion is active. The bill in all such cases makes the prohibitory requirement that the animal shall be completely anesthetized during the whole of the experiment. Again, the ridiculous restrictions concerning experiments made upon horses, asses, mules, dogs, and cats would very nearly prohibit experiments upon these animals. That is to say, the wording of the certificate which must be given, to the effect that the experiment "will necessarily be frustrated unless it is performed on one of these animals" and that "no other animal is available for such experiment" would prohibit many such experiments. It might be much more convenient to use one of the animals named, much less expensive, much more conclusive, and yet some other animal might be available. Again, the delay of a week before the certificate becomes available would prohibit more than half of the original investigations such as I have seen made with these animals. Experiments with contagious diseases, at least, are often planned after the material for them is obtained, and they must be performed at once, or the material undergoes decomposition and is lost. Such experiments cannot be foreseen, and consequently the required certificate cannot be given a week in advance. If to this delay is added the time and trouble required to obtain the signatures of three physicians in active practice and of a professor of a duly established reliable medical school, it is seen that there is here again a very serious prohibition. I am writing as a specialist whose studies are for the most part limited to contagious

diseases. The specialists in other lines of research, such as general biology, physiology, and surgery, feel that they will be almost equally affected. Now, if nine-tenths of the experiments on the pathology of infectious diseases are prohibited by confining such investigations to work for *new discovery*; if a part of the remainder are prohibited by stopping ingestion, inspiration, cohabitation, and exposure experiments; still another part by practically preventing experiments on horses, asses, mules, dogs, and cats, what proportion have we left? More than this, no one can tell how many other lines of experiment will be found prohibited when the bill is actually enforced, if such a catastrophe should ever occur.

With the provisions of the bill a matter of record, how can Dr. Leffingwell truthfully assert that the statements in your editorial in regard to preventing and abolishing animal experimentation in the District of Columbia are "wholly without basis of fact?" Has he read the bill? Does he understand the English language? If so, what is his estimate of the readers of THE MEDICAL NEWS?

The cruelties and abuses of vivisection have been exploited to the fullest extent by Dr. Leffingwell and his antivivisectionist friends, but they have shown no good reason why a different standard of cruelty should be applied to the scientists from that which is applied to the rest of mankind. For all time, it has been admitted that it is not cruelty to cause animals pain where the motive justifies the act. We whip horses to make them obey; we castrate cattle, sheep, swine, and fowls, for economic purposes; we saw or cut off the horns of cattle to prevent them injuring each other; we perform painful surgical operations on animals for purely financial considerations, and in each case we allow the courts to decide whether or not the circumstances of the individual case were such as to constitute cruelty. The bill which Dr. Leffingwell advocates provides that an experiment made with the best of motives, for the most sacred purpose, is cruelty unless performed in a certain prescribed manner and under rigid conditions. It leaves no discretion to the courts to decide whether there is or is not malicious cruelty. In other words, it enacts that certain experiments are cruel, and that the scientists who perform them are criminals whether or not the circumstances of the case justify such a finding.

The language quoted from Dr. Gould may or may not have been founded upon good reason. It suggests to my mind the probability that he had just been reading some of the vivid and soul-harrowing antivivisection literature which is now so abundant. But admitting all that he says, shall we permit the foes of all experimentation to sit in judgment upon our experimenters and say that this man has proper "training and method," and that man is working "only in the interest of vanity?" Have not the antivivisectionists abused in the most unqualified terms some of the greatest scientists that have ever lived? Would they not have stopped the work of Pasteur, Koch, and all of their disciples? Is not a great part of their literature devoted to the task of showing that no discoveries of value have been made by experiments upon animals? Have not the men who made

the greatest discoveries in all departments of science been looked upon as vain, visionary, and deluded, until their demonstrations were complete? No one can foretell who among our scientists will make the great discoveries; no one can tell whose method of investigation is right or wrong; no one can say that an experimenter is actuated by vanity alone, and it would be an outrage on personal liberty and disastrous to scientific advancement to permit any one to make discriminations for any such alleged reasons. What would have become of Morse and the electric telegraph if his methods, motives, and the results he expected to accomplish had been put to such a test. Let science be untrammelled; let research be free; punish only for the crimes which are actually committed, and let us not be led into foolish and harmful legislation by the distorted accounts of experiments in European laboratories, or the mere assertion that experiments are made without sufficient reason here. Every scientific man knows that more experiments fail than succeed in all branches of science; who, therefore, but the experimenter can say whether there was or was not justification for any particular experiment that has failed to yield expected results?

It is not my purpose, however, to favor experimentation or demonstrations by persons whose education does not fit them for such work. I am as much opposed as any one can be to demonstrations by vivisection in the common schools, or to any form of malicious cruelty. Any one who reads the literature of the antivivisectionists can easily satisfy himself, however, that their criticisms are for the most part directed against qualified men, physicians, physiologists, biologists, etc., and it is such men that they are trying to reach by this legislation. All others who conduct painful vivisections can be punished under existing laws. Very respectfully,

D. E. SALMON, D.V.M.

WASHINGTON, D. C., July 19, 1897.

OUR VIENNA LETTER.

[From our Special Correspondent.]

A BUST OF BILLROTH FOR THE UNIVERSITY—AUSTRIAN STUDENT "BUMMELS," DUELLING, ETC.—PLACENTA PREVIA TOTALIS CENTRALIS—PREGNANCY IN AN UNDEVELOPED UTERINE HORN SHUT OFF FROM THE CERVICAL CANAL—SURGERY AND HYGIENE IN CONNECTION WITH THE GRÆCO-TURKISH WAR.

VIENNA, July 5, 1897.

A HALF length figure of Billroth has just been set up beneath the arcades of the University. The memorial to the great surgeon finds a fitting place among the effigies of the other great representatives of scientific medicine in Vienna—Van Swieten, Hyrtl, Schuh, Bruecke, Hebra, and Braun. The figure of the grand old man is very lifelike and characteristic, as he is represented in his surgical gown with scalpel in hand. The formal unveiling is not to take place until the busts of certain other noted University professors, as Werner and Endlicher, have been placed in position, when there is to be an elaborate ceremony.

The University arcades have lost some of their time-

honored traditions, and will cease to have the place in student memories which they have possessed time out of mind, in consequence of a recent decision of the University faculty. It has been the custom for students on Saturdays, when very few lectures are given, to assemble beneath the arcades and promenade there with friends. A perfectly innocent pastime, one might well imagine, and one not calculated to draw down the displeasure of the faculty; but the members of the different student societies usually kept by themselves and glared and cracked jokes at the expense of each other, and the result was student riots and student duels. Here, as in Germany, one frequently meets with the little round vari-colored peaked caps of the duelling fraternities, and most student faces bear scars, some of them recent enough. Not so often among the medical students perhaps as among the others are the society badges and caps noticeable, but almost without exception the faces of the medical assistants in the general hospital bear traces of scars, some of them keloid enough in character to suggest the truth of the remark which has been made that irritants are sometimes deliberately applied to such wounds when recent to make the resultant scar more noticeable.

The Saturday promenades at the University being forbidden (student "*bummels*" as they were called) there has been a noticeable restlessness in the student body during the present semester, as if there were pent-up energies seeking a vent somewhere. At first the faculty prohibition of "*bummeling*" was scarcely taken seriously, and there were Saturday demonstrations at the University. These were promptly put down by the University authorities, and the police department was called upon to enforce faculty regulations. Then there were some demonstrations on the streets and in the parks. About this time the Austrian Reichsrath passed a bill making the use of the Bohemian or Cjeckish language legally obligatory in certain parts of the Austrian Empire. This could not fail to be displeasing to the German students at the University and a lot of the pent-up energy found a vent in a series of meetings in which vigorous protests were made against this putting a despised Slav tongue on a level with their beloved German. The protests culminated just before the adjournment of the Reichsrath in a stormy demonstration by a large student body in the Parliament buildings which required police interference.

There is a good deal of carping criticism at times in America of the amount of attention which is devoted, with the approval of University authorities, to athletics. The critics would find much more reasonable grounds for criticism of the methods generally in vogue at European Universities which the rising generation make use of for the expenditure of surplus youthful energy. The healthy, hearty out-door exercise, with ample opportunity afforded for the utmost expansiveness of superabundant vitality is replaced here by the hilarious drinking parties in the cafés and beer-gardens that too often degenerate, notwithstanding proverbial German student capacity for beer, into drunken revels. The healthy, manly competition of the athletic field, and the training which brings with it precious habits of self-restraint, full muscular de-

velopment and invaluable exercise of the faculty of keeping one's temper are represented in university life only by some monotonous in-door exercise, very slightly indulged in, and the brutal and brutalizing practice of duelling, which neither the ridicule of foreigners nor the growing popular disapproval of it have so far been able to eradicate.

Two of the recent finds in the *post-mortem*-room are interesting as indicating the teachings of the Vienna school of pathology on certain points in obstetrics which are sometimes subjects for discussion. The section of a patient who died from placenta previa revealed the fact that the placenta had been adherent at every point around the internal os. On theoretical grounds it is sometimes urged (it is the teaching of at least one French school of obstetrics) that as the placenta must begin its growth at some point lateral to the internal os it will always remain so, and cannot become a central placenta previa. As a matter of observation the *post-mortem* shows that there have been placental adhesions all around the os, and that penetration into the uterine cavity could only be effected by separating placental and uterine tissues.

A case of pregnancy in a rudimentary horn of a bicornute uterus, where the accessory uterine cavity was completely shut off from communication with the cervical canal, was another demonstration of the wonderful motility of the spermatozoa. Here there seems no question but that the fertilizing element found its way up the only Fallopian tube open to it and thence through the general peritoneal cavity to the ovary of the other side. From here the impregnated ovum descended the tube of its own side into the closed cavity of the rudimentary horn. Such cases are not so extremely rare in literature, but the visible demonstration of what seems almost palpably impossible was extremely interesting.

Austria is so thoroughly on a war footing, and military matters always attract so much attention that the recent Græco-Turkish war could not fail to be of interest in medical as well as army circles. There has been considerable dissatisfaction expressed at the surgical and hygienic arrangements of the sanitary corps during and after battles. Modern scientific methods were not applied as effectively as might be expected in accordance with the advances during the past twenty years. A great deal of attention has been devoted to military surgery and hygiene since the Franco-German and Russo-Turkish wars, and it seems too bad that the first European war since then should not have demonstrated the value of the work done. Some complaints were expressed, too, regarding the attitude of the voluntary nursing associations, even the perfect neutrality of the Red Cross not being always above suspicion. Christian (?) feelings were sometimes thought to have lead to the demonstration of preference to take care of fellow Christians and let the Turks shift for themselves. The subject has aroused renewed interest in the section of military surgery at the coming International Congress at Moscow, where some very important questions are to be discussed. Among them being "The Organization of First Help," "What Primary Bandage for Shot-Wounds is Preferable?" "What

Is the Most Suitable Apparatus for the Treatment of Bullet Fractures?" and "How Can a Supply of Healthy Water be Best Supplied for Use on the Battle-field?"

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE WORK OF THE SANITARIUM ASSOCIATION OF PHILADELPHIA — THE PREVALENCE OF "BABY-FARMING" — STATE AID FOR PENNSYLVANIA INSTITUTIONS — VITAL STATISTICS FOR THE WEEK ENDING JULY 17TH.

PHILADELPHIA, July 17, 1897.

SITUATED at Red Bank, on the New Jersey side of the Delaware river, just below the city, are the grounds and buildings of the Sanitarium Association of Philadelphia, a corporation having for its aims the prevention of disease and the alleviation of suffering among the poor children of the community, by giving them a day's outing in a spot where an abundance of shade trees, and an almost constant river breeze are exchanged for the heat of the city streets and the stifling atmosphere of the slum districts which cause such an excessive mortality in young children. The Sanitarium is open each week-day from June to September, and places no restriction on the number or length of the visits made by the poor. Hourly trips are made to the grounds by two steamboats, the property of the Association, which carry on an average of twenty-five hundred children and their caretakers daily. Here, after a short river ride, which is in itself of no small benefit, the alley-bred children and their elders may look forward to a day of recreation and rest, with plenty of good food for the caretakers, and pure, sterilized milk for the little ones. Large bathing pools for both sexes are provided, and a dispensary for the sick ones is maintained.

The plant of the Sanitarium also includes a children's hospital of commodious size and excellent appointments, which has accomplished valuable results in the past in the treatment of the ailments peculiar to early life. Three hundred or more cases are treated in the hospital during each season, with an exceedingly low mortality, considering the class of patients, and their uniformly poor physical condition.

Beginning in a small way in 1877, the work of the Sanitarium Association has grown and developed in accordance with the demands made upon it, until at the present time, after twenty-years' unremitting and inestimably valuable work, it has become a large factor for good among the class of the community for whose benefit it was intended. Nearly 180,000 children were received during the last season at Red Bank, a large percentage of whom otherwise would have been doomed to suffering and death.

The publicity recently given to the methods pursued in her business by a notorious midwife of this city again directs attention to the existence of these cheap lying-in establishments, with their insinuating advertisements in the public press, of "best care for the mother before and after confinement", and of the boarding and "adoption" of infants. In spite of the fact that the proprietresses of these establishments are utterly ignorant of the first prin-

ciples of the act of parturition, that, for an extra consideration, they do not hesitate to so manage that the unhappy infant handed over to their care shall die of starvation, if the parent does not want to be bothered with the care of the child, and that most of them are on a moral level with public abortionists, if, indeed, they do not sometimes dabble in this trade when circumstances are favorable—in spite of such truths as these, and in the pronounced opposition of the medical profession, these women continue to follow their business, and to obtain from the authorities legal certificates allowing them to do so. And they will continue it just as long as a demand exists among certain classes to escape the consequences and shift the responsibilities of maternity, regardless of the fate of their offsprings; and just so long as the sexually indiscreet continue to find in these establishments a refuge in time of trouble, will legal measures and the sentiment of the better class of the community be powerless to prevent the evil.

And so "baby-farming," with the alarming mortality among its innocent victims from that convenient disease "marasmus," continues to flourish in this enlightened era of medical progress, and it bids fair to exist until laws shall have become more than mere written statutes, or until the community shall have experienced a revulsion of morals. But the latter would be a miracle, and miracles do not come to pass at the close of the nineteenth century.

From Harrisburg comes the announcement that appropriations to institutions not fully under the control of the State and to private institutions will not be acted upon finally until ample time has elapsed for a thorough inquiry into their several needs. This simple announcement may be taken to mean that the hospital appropriation bills of this year will be rushed through the legislature with less haste than is the usual custom in dealing with such items, and that many boards of hospital managers through the State are less certain this year than they have been in the past of expanding their institutions on lines limited only by the generosity of the Commonwealth. In this annual scramble for funds many an honest and deserving charity suffers, while the political dexterity of some totally uncalled-for institution secures for it a tidy sum for "improvements."

Already the supply for hospitals far exceeds the demand, and it would be a sound business principle to reduce their number. But business principles and hospital boards are rarely compatible, so we must continue to look for this yearly rush for money by the deserving and undeserving alike, losing sight of the deleterious effect which this fostering of hospitalism must have upon the income of the general practitioner, not to speak of the moral injury many an otherwise truthful hospital manager must sustain in picturing to an impressionable house of legislature the "pressing claims" of his institution.

The number of deaths in Philadelphia for the week ending July 17th was 528, an increase of 22 over those of the preceding week; of the total deaths, 270 occurred in children under five years of age. The principal causes of death were tuberculosis of the lungs (46), diseases of the

heart (16), pneumonia (22), and cholera infantum (112). The returns of contagious diseases for the week were as follows: 73 new cases of diphtheria, with 14 deaths; 59 new cases of scarlet fever, with 4 deaths; 46 new cases of enteric fever, with 5 deaths. The total number of new cases of contagious diseases numbered 10 more than those of last week, with a decrease in the mortality of 18.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

SATISFACTORY RESULTS FROM CALOT'S REDRESSEMENT BRUSQUE—HYPERTROPHY OF THE PROSTATE RELIEVED BY PROLONGED CATHETERIZATION—NEPHROTOMY FOR HYDATID CYSTS OF THE KIDNEY—RECURRENT FRACTURE OF THE PATELLA—CASES OF DEATH FROM BICYCLE RIDING—THE TREATMENT OF MUCOMEMBRANOUS COLITIS.

AT the session of the Academy of Medicine, held June 8th, MONOD acknowledged that *in Potts' disease good results seem to be obtained by forced reduction (redressement brusque)*, but that time will be required before the ultimate value of this operation is known. In certain cases no attempt at reduction should be undertaken. Such are those in which the reduction, if successful, would leave a gap in the vertebræ too great for subsequent consolidation. Thus, in cases in which the deformity has existed for four or five years or more, forcible reduction exposes the patient to the danger of rupture of the meninges, hemorrhage, tuberculous infection, etc. On the other hand, in deformities which have existed only five, seven, or nine months, reduction usually can be made without trouble.

PEAN expressed himself as satisfied with the operation. One young girl who suffered from paraplegia, due to a deformity about two years old, recovered complete use of her limbs after forcible reduction.

VERGER thought that paraplegia is not sufficient indication for this treatment, as the paraplegia of the lower limbs occurring in Potts' disease often disappears spontaneously.

BAZY has treated several *patients suffering from hypertrophy of the prostate and its attendant evils by the introduction of a catheter*, which is left in place for several weeks, the patients being allowed to go about in the meantime. As a result, a marked atrophy of the prostate follows, and the unpleasant symptoms which are due to its increase in volume (retention of urine, cystitis, etc.) disappear.

At the session of the Surgical Society, held June 2d, HOUZEL described two operations performed by himself *for hydatid cysts of the kidney*. The first of these was a nephrectomy, which was carried out with difficulty and was followed by the death of the patient. In the other case a nephrotomy was performed, with satisfactory results, an operation which the speaker believed to be indicated in most similar cases.

PEYROT has removed one kidney for this cause, with a fatal result. Three other patients upon whom nephrotomy was performed recovered.

At the session of June 9th, PEYROT spoke of the *recur-*

rent fracture of the patella, which occurs in certain individuals who presumably have especially fragile bones. He recalled one case occurring in 1880, in a man aged fifty-four. The patella was again broken during 1883, 1887, 1888, and 1889. There existed no less than three lines of fracture in the patella, each being perfectly distinct. In another case, four or five days after the occurrence of the accident, he had sutured the broken bone anteriorly, with excellent result. Nine months later the bone broke again, and upon examination it was found that the suture had parted and a line of fracture was present passing through the fibrous callous. In another and similar case, the silver wire used for suture was broken at the time of refracture. In this case osseous union had taken place throughout the inner two-thirds of the line of fracture. Both of these patients were treated by passing a wire around the patella as a hoop is placed around a cask. The result was satisfactory.

LUCAS-CHAMPIONNIERE has operated fifty times for fracture of the patella, with four deaths—one from chloroform; one from confusion of the kidney, which had been overlooked; one from constant vomiting, the cause of which was not clear; and a fourth from infection, the case being a complicated one. The results in the other cases were most satisfactory. Only two relapsed, due to the fact that the fragments could not be accurately approximated. In no case was there a breaking of the suture such as described by Peyrot. The patients were allowed to go about in from ten to fourteen days.

At the Medical Society of the Hospitals, June 4th, PETIT mentioned *five cases of death occurring either during or immediately after a bicycle ride* and directly attributable to heart disease. Persons suffering from heart trouble ought to abstain altogether from this exercise or to take it with great moderation. The same is true of those of either sex suffering from tuberculosis of the lungs, and from diseases of the genito-urinary apparatus whether in an active stage or recently cured.

Before the Therapeutic Society, June 9th, MATHIEU discussed *the treatment of mucomembranous colitis*, making the following points: (1) One cannot hope to cure mucomembranous enterocolitis until the constipation, which is its dominant symptom, is made to disappear. (2) There usually exists an irritation of the large intestine which produces not only hypersecretion, but often hyperesthesia, as well as spasmodic contraction of certain zones of the colon. (3) This affection appears especially among persons of a neuro-arthritis or neuropathic temperament. (4) It is very common in women affected with visceral displacements or uterine troubles.

In treating the constipation, violent purges and drugs, such as aloes, which congest the rectal mucous membrane, are to be avoided. Hydrastis Canadensis, or hamamelis are of value. Sometimes regulation of the diet and habits of life are alone sufficient, while hydrotherapy, electricity, and massage give good results. Large rectal injections exert a favorable influence upon the mucous hypersecretion.

Among purgatives, castor oil, in doses of one-half or one teaspoonful, taken before breakfast for several suc-

cessive days, holds the first place, but cascara sagrada, with magnesia and bicarbonate of soda, rhubarb, senna, etc., are almost equally good.

Injections play an important part in the treatment, and they are best given by means of a bulb syringe, the object being to dislodge the fecal masses and adherent secretions. Either boiled water or a solution of bichloride of soda, 1 to 5000, salicylate of soda, 1 to 1000, or chlorid of soda, five per cent., may be used. If the stools are dysenteric, irrigation with a solution of nitrate of silver, 1 to 4000, will be found beneficial.

Vienna.

THE TREATMENT OF OBESITY BY THYROIDIN—THE RELATION OF MUSCULAR SPASM TO DISEASES OF INFANCY.

At the session of the Medical Club, held May 26th, HIEBEL described the *results obtained in the treatment of obesity by thyroidin*. The preparation was taken without difficulty, but often the patients experienced shooting pains in the extremities which lasted for twenty or thirty seconds. In only one instance was the ingestion of the medicine followed by a feeling of anxiety, palpitation of the heart, and headache, symptoms which continued for two days after it was discontinued. In general, the patients lost from two to three pounds a week. In the beginning of the treatment this loss was most noticeable upon the neck and chest, later upon the abdomen and upper extremities, and finally upon the lower extremities. In some instances, while a loss was taking place in the lower extremities, there was actually a gain in size in the region of the neck.

At the session of June 2d, ZAPPERT read a paper upon *muscular spasm in connection with diseases of infancy*. These spasms may be the result of intestinal affections, and also of pulmonary diseases or of septic processes starting from the umbilicus. The spasms may present either of two types, as illustrated by the following cases: An infant with congenital syphilis, pneumonia, and intestinal catarrh, held both arms and legs in a cramped position, but active motions were very slight. Passive motions were strongly resisted. The reflexes were marked. In a second case, of pneumonia, in a child aged seven days, there was tetany of the upper extremities, followed in three or four weeks by a relaxed condition and death. Examination of the chord in these cases showed marked degeneration of the anterior horns in the cervical and lumbar regions. In accordance with these facts, Zappert makes three groups of cases: (1) Various diseases of infancy produce changes in the anterior horn without clinical symptoms. (2) In other cases, tetanic symptoms develop. (3) In the third group are placed those cases in which the stage of irritation is followed by one of paralysis.

A New Narcotic Discovered.—The news comes from the City of Mexico that the physicians of the Insane Hospital for Women, in their efforts to discover some safe narcotic which would produce sleep, are using daily a simple remedy prepared from the seed of white zapote. It is said to produce a tranquil sleep.

SOCIETY PROCEEDINGS.

AMERICAN CLIMATOLOGICAL ASSOCIATION, THIRTEENTH ANNUAL MEETING.

Held at Washington, D. C., May 5, 6, and 7, 1897.

THE President, DR. E. FLETCHER INGALS of Chicago delivered an address in which, after some introductory remarks, he considered the antiseptic treatment and limitation of climatic treatment of pulmonary tuberculosis, showing in eight briefly reported cases that betterment sufficient to be commonly termed a cure may be obtained from antiseptic treatment. He believes that, aside from tonic and nutritive agents, antiseptics are the only medicines which have any power in checking the progress of tuberculosis, especially when used nearly to the point of saturation of the system in cases in the earlier stage. He prescribes the oil of cloves, beginning with five drops in capsules, followed by a glass of milk, and repeated from three to five times a day. He prefers the carbonate of creosote to creosote, or to guaiacol or its carbonate.

DR. FREDERICK I. KNIGHT read a paper on

THE CHOICE OF A SUMMER RESIDENCE IN NEW ENGLAND.

He mentioned three kinds of resorts by the sea: the Maine coast and the Beverly shore, the shore south of Cape Cod, the islands; and two in the country: the mountains, and the country not much elevated, but quite far north. After describing the particular features of these various resorts, with special reference to the winds and changes of temperature, he stated that in case all the members of a family are robust and free from individual contraindications it will in general be found best for those who spend most of the year inland to go to some part of the seacoast for the summer, and for those who live on the shore to go inland or to the mountains.

DR. BOWDITCH of Boston spoke of the stimulating effect of the coast, especially the island portion of Maine. He referred to the fogs and maintained that they are often of a dry character. He said that it may at first seem a misnomer to speak of a "dry fog," but anyone who has been in that region will understand the term. The light vapory mist which frequently drives in from the sea has no definite sense of moisture as it strikes the face and in the midst of it the air frequently feels dry. They are in marked contrast to the drenching fogs of the south shore.

DR. CHARLES D. ALTON of Hartford said that in visiting Nantucket some years ago he carried with him the belief that it might be an excellent place for patients with tuberculosis, but he found that among the natives and visitors numerous deaths occurred from that disease. He did not quite understand this until he began to appreciate some of the local features of the island and its meteorologic phenomena, especially the matter of fogs, as compared with the northern coast resorts. This shows how careful one should be to study the minutiae of localities that are approximate. Physicians often send their patients to California, and not being directed to any particular part of that state, they make a choice themselves of a locality and later are often compelled to seek

another spot on account of the unsuitability of the one first selected. Patients are sent into the Adirondacks without any definite directions as to locality, and one sees them living in close, hot hotel rooms where the conditions are most unfavorable.

DR. R. H. BABCOCK of Chicago spoke of the long winters and comparatively short summers met with in Maine, and said that this accounts for the high death-rate from phthisis, the inhabitants necessarily being confined within doors during a greater portion of the cold season.

DR. JOHN MADISON TAYLOR thought the disease less prevalent in Maine than formerly, owing to an improvement in the quality and quantity of food consumed. He considers the climate of Mt. Desert excellent for neurasthenics and melancholics.

DR. D. R. BROWER of Chicago presented a paper on

CLIMATE IN RELATION TO NERVOUS DISEASE.

Regarding neurasthenia, he said that the special and visceral forms of this disease do best, as a rule, in a marine climate. A sea voyage in a slow sailing vessel is often of the greatest service, as is a residence in a favorable marine climate, such as southern Spain, Algiers, the Riviera, or Italy for the winter, and Holland, the coast of England, Ireland, and the coasts of Norway and Sweden for the summer. The cerebral form of neurasthenia, as a rule, improves in an inland climate, and one of the best in the United States is that of Saratoga Springs, New York, especially in the case of those patients who have marked insomnia, constipation, and uricacidemia. The climatic conditions at Saratoga are eminently conducive to sleep. In cerebral neurasthenia, with no marked disorder of the circulatory system, the bracing air and abundant sunshine of the Rocky Mountains is often highly beneficial.

DR. JOHN MADISON TAYLOR then read a paper on

CLIMATE OR ENVIRONMENT AS A FACTOR IN THE REPAIR OF NEURASTHENIA AND MELANCHOLIA,

and was followed by DR. S. E. SOLLY who contributed one, entitled

THE COMPARATIVE MERITS OF RESORTS IN COLORADO, NEW MEXICO, AND ARIZONA.

DR. R. H. BABCOCK of Chicago then read a paper, entitled

A BRIEF CONSIDERATION OF SOME POINTS IN THE MANAGEMENT OF CONSUMPTION.

DR. KARL VON RUCK of Asheville read one on

THE CLINICAL VALUE OF THE CULTURE-PRODUCTS OF THE BACILLUS TUBERCULOSIS IN TUBERCULAR AFFECTIONS.

DR. FISK read one on

DIGESTION *versus* DRUGS IN THE TREATMENT OF PHTHISIS,

and DR. S. A. KNOPF, one on

AERO- AND HYDOTHERAPEUTICS IN THE PREVENTION AND TREATMENT OF PULMONARY TUBERCULOSIS.

REMARKS UPON THE TREATMENT OF TUBERCULOSIS BY THE ANTITUBERCULAR SERUM

was the title of a paper by DR. HINSDALE who reported the effect of the serum in a case of tuberculosis in which there had been hemorrhages, cough, loss of flesh and abundant bacilli. The improvement was marked and the bacilli disappeared. No unfavorable result accompanied the injections, which were given on alternate days in quantities varying from five to forty minims. The patient is still under treatment.

In discussing Dr. Hinsdale's paper DR. E. A. DE SCHWEINITZ of Washington said that a few years ago he undertook the study of the tuberculosis germs and found they contained about thirty or forty per cent. of fats. He then tried to separate the different acids, and discovered that the fats were glycerids, principally of palmitic acid and high and low melting acids. The germs he used had been attenuated purposely by artificial means. About the same time Dr. Trudeau had made experiments with an attenuated germ and noted similar results. Dr. Trudeau also found that the germs so attenuated were no longer capable of producing disease. Dr. de Schweinitz obtained some interesting results by first attenuating the germs and then inoculating guinea pigs with them and subsequently with virulent germs. In some instances complete immunity was produced.

The next idea to be carried out was the preparation of the antituberculous serum. For this purpose he used various animals—rabbits, guinea-pigs, cows, horses, etc., sometimes using attenuated germs and sometimes virulent ones, and at other times, tuberculin. The serum obtained from these animals was used to treat tuberculous guinea-pigs, with fairly satisfactory results. This serum has also been used by Dr. Stubbett of the Liberty, N. Y., Sanitarium, by Dr. Trudeau of Saranac Lake, and by Dr. C. W. Richardson of Washington. All have reported improvement as regards the effect of the serum on the patients.

DR. CHARLES F. GARDNER of Colorado Springs, read an elaborate paper on

THE DANGERS OF TUBERCULAR INFECTION AND THEIR PARTIAL ARREST BY CLIMATIC INFLUENCES.

DR. I. H. HANCE of Lakewood said that he had made a study of the infectiousness of dust, and had met with some rather surprising results. He had examined three rooms which were occupied by a large family, and had obtained ten square inches of dust from the room occupied by the mother, with which he had inoculated some guinea-pigs. Of the four inoculated pigs, three died of tuberculosis and one of an acute infection. He had also examined the dust in the Broadway cable cars, Elevated cars, and the Avenue C, and Houston Street surface cars in New York City. In the cable cars he had found a greater number of germs than in any cars in that city. The test was not a satisfactory one as it was merely a comparison of the number of colonies which grew on gelatin plates after an exposure of five minutes.

Dr. Hance said that he had used at least two hundred guinea-pigs in experimental work and by far the greater

number of these were found to be free from any tuberculous infection after they had been subjected to inoculation; only those were tuberculous in which he had reason to suspect the presence of the tubercle bacilli previous to inoculation.

DR. S. G. BONNEY of Denver read a paper, entitled OBSERVATIONS UPON PULMONARY TUBERCULOSIS IN COLORADO.

The following papers were then read in full or by title: Undeveloped Graves' Disease Simulating Simple Irritable Heart, by Dr. R. G. Curtin of Philadelphia; Turpentine as a Remedial Agent, by Dr. J. B. Walker of Philadelphia; Some of the Vagaries of Croupous Pneumonia, as seen in Central New York, by Dr. H. L. Elsner of Syracuse; Experiences in the Treatment of Diphtheria, by Dr. L. D. Judd of Philadelphia; The Treatment of Gout by Natural Mineral Waters, by Dr. C. G. Ransom of New York; Report on Mineral Springs, by Dr. A. C. Peale of Washington, D. C.; and Sunstroke, by Dr. W. F. R. Phillips of the U. S. Weather Bureau, Washington, D. C.

The Association then adjourned.

REVIEWS.

DISEASES OF INFANCY AND CHILDHOOD. By L. EMMETT HOLT, M.D., Professor of Diseases of Children in the New York Polyclinic, etc., etc. Pp. 1117. New York: D. Appleton & Co., 1897.

IT is seldom that we have experienced so much pleasure in the course of book-reviewing as in the case of this volume by Dr. Holt. The work is a credit to American medical authorship. Perhaps its most prominent characteristic is its intimate blending of wide personal experience with extensive knowledge of, and large use, of pediatric literature. In consequence the reader feels that, in the statements placed before him, he is made acquainted not only with the author's well-grounded views, but with the generally accepted opinion also. Another excellent feature is the clearness of arrangement and of diction, the author writing in a methodical, *ex cathedra* manner and subdividing what he has to say under convenient headings, so that it is an easy matter for the reader to find just what he wants. We note, too, a judicious use of illustrations where they are needed, there being more than two hundred contained in the book.

The apportionment of the pages to the various subjects seems, on the whole, to be very just. In the matter of giving references to medical literature, there is, perhaps, some cause for criticism. The author, it is true, does occasionally refer his reader to a foot-note, but these are infrequent and are not employed with any uniformity. For instance, in writing of "Winckel's Disease," the foot-note gives reference to Winckel's original article, and to the articles of two other writers, but under "Buhl's Disease," on the next page, no references at all are given, even to the original paper by Buhl. We are aware that there exists a great difference of opinion as to the advisability of admitting references to other literature, some

relegating these entirely to monographs and encyclopedias, but our own opinion is distinctly that they interfere in no way with the value of a work as a text-book for students, and that they are of extreme value to physicians who would wish to consult the writer quoted.

Examining the work a little more in detail, we notice among the contents of Part I, a chapter upon the Peculiarities of Disease in Children. Brief remarks of this nature occur in many other pediatric text-books, but we do not know of any work which equals Dr. Holt's in the treatment of the subject. A chapter on Diseases of the New-born is one which we always look at somewhat askance, although nearly every book of this character contains it. As a rule, a heterogeneous lot of subjects is grouped together, many or most of which could better be classified with other affections, but which are placed here merely for the sake of convenience or to avoid the problem of their proper classification. The present author has cut the number down somewhat, and we should be pleased to see it still further reduced. A large number of pages are devoted to "nutrition," including the study of infant-feeding, also to the diseases directly depending upon faulty nutrition. The remarks on feeding are intensely practical, particularly those upon the method of home-modification of milk for the infant's use. In Diseases of the Digestive Tract he has departed to some extent from the nomenclature most commonly employed, but the departure is all in the direction of increased accuracy, and is to be commended. Respiratory Diseases are very fully treated of, particularly pneumonia, which is illustrated by microphotographs and a colored plate. The section on Nervous Diseases is satisfactory, and that on the Specific Infections equally so. In the latter is exemplified the difficulty of classification which the modern study of infection has imposed upon writers. We refer to the fact that tuberculous bronchopneumonia is described here, while ordinary bronchopneumonia, likewise due to the action of germs, in all probability, and so often clinically indistinguishable from the tuberculous form, is placed under Respiratory Diseases. But this awkwardness of classification is one which the times force upon every author and which only time can remove.

The American practitioner who desires to be fully acquainted with what American pediatrics is accomplishing cannot afford to be without this volume.

A HAND-BOOK OF MEDICAL CLIMATOLOGY. By S. EDWIN SOLLY, M.D., M.R.C.S. Philadelphia and New York: Lea Bros. & Co., 1897.

ONLY those who have had occasion to hunt through libraries for literature relating to climatology can appreciate the value of a general work of the kind which Dr. Solly has given us. There has been a very large number of contributions regarding certain health resorts or climates, it is true, but many of these contain but little valuable information, and others are so prejudiced that they are nearly valueless. In any case, to be able to make a satisfactory comparison of the places and climates described requires a vast deal of reading. This, the author has done for us, and we receive the benefit of his

conclusions. He has made a careful study of the subject from the broad plane of medical climatology, treating it as a science in itself.

The volume is divided into three sections. The first deals broadly with the principles of medical climatology, and describes its close connection with physics, meteorology, ethnology, geography, pathology, etc. Earth, air, water, sun, etc., in their influence upon climate are successively discussed. This section also contains interesting remarks on the influence of race and of geographic position upon disease, and a chapter upon the classification of climates. The second section treats of "The Therapeutics of Climate in relation to Disease," each group of diseases being considered in turn. There is no attempt made here to describe individual health resorts and their adaptation to special diseases. Particular attention is justly given to the climatic treatment of phthisis, and there are valuable comparative statistical tables of the results of treatment at different places. The influence of climate upon other respiratory diseases, heart disease and affection of the liver, kidneys, etc., is also considered.

The third section is devoted to a description of special climates and localities. It is here that we have to make our only criticism. Of course, to give a full description of all health resorts would make a volume far too large for practical purposes, and the author has very properly, as he says, "made the effort to present as many new facts as possible about useful but comparatively unknown resorts," and has described very briefly those regarding which the literature is already ample. Yet it seems to us that almost too much space is given to American health resorts at the expense of those in other parts of the world. Although so many of these have already been described by others, yet the reader of this volume may know little, if anything, about them, and may be turning to it for information; in fact, he may not know where else to look. It is, therefore, greatly to be hoped that in a second edition Dr. Solly will elaborate this portion of the book, and will append a list of references to the literature bearing upon the subject in which fuller details may be found than the compass of a single volume allows.

But this criticism is not at all in the line of condemnation; it is merely a suggestion whereby a valuable work may be made still more valuable. Dr. Solly's book is a very distinct addition to medical climatology—a useful book which should be not only in the hands of every physician with whom rests the important decision regarding the destination of a patient about to leave home in search of health, but in the possession of all those also who have the praiseworthy desire to acquaint themselves with the principles of that important subject, Climatology.

SEPTIC CONDITIONS OF THE INFANTILE ALIMENTARY CANAL. By F. W. FORBES ROSS, M.D. Pp. viii, 138. London: The Rebman Publishing Co., 1896.

THIS little book is a step in advance in the understanding and treatment of the diarrhea and constipation met with so frequently in infants and children. The author

regards the whole alimentary canal as an organic unity, not as a series of parts which are independent in function and therapeutic needs. He sees two causes for the ordinary disturbances—one the result of chemic, the other the result of septic changes. The first mentioned he thinks of less importance than, or as preliminary to, the second. Naturally, therefore, he gives most of his attention to these septic conditions.

The task is really one of the greatest difficulty, and should not, as is here the case, be looked at almost wholly from the clinical view-point. Ever since the appearance of Escherich's work on a similar subject we have recognized the great complexity of micro-organic life in the alimentary canal, as well as the extreme diversity of its main and by-products. Dr. Ross has a good working idea of this, but his elaboration of it is hardly final. His book is earnest and hopeful, but merely preliminary.

He is liberal in his use of drugs, and favors the free administration of intestinal antiseptics, practically ignoring the recognized value of gastric and intestinal lavage. His treatment is apt at times to be somewhat complex, and he holds to some methods which many practitioners do not regard so highly. He believes in the use of artificial pepsin and in the futility of hydrochloric acid; he thinks that there is "nothing so important in the successful treatment of these conditions as the rational and moderate use of opium," and advocates the use of boiled milk. On the other hand, he gives good directions for the care of the utensils of feeding and the proper methods of collecting and handling milk. In an appendix he includes a formulary and method of preparing infant foods.

ATLAS DER KLINISCHEN UNTERSUCHUNGSMETHODEN NEBST GRUNDRISS DER KLINISCHEN DIAGNOSTIK. VON DR. CHRISTFRIED JACOB. Munich: J. F. Lehmann, 1897.

THE fifteenth volume of Lehmann's hand atlases is devoted to the methods and elements of clinical diagnosis. It contains 182 illustrations, 68 being lithographed plates. The blood, the urine, and the feces are shown in their various reactions, the colors being very faithfully reproduced. These are followed by plates showing the normal limits of percussion and their modifications in disease. The various diseases of the heart, lungs, liver, and some of the other abdominal organs are ingeniously portrayed, but we doubt their great value as didactic agents. The accompanying text is clear and modern. The book is handsomely made.

INTERNATIONAL CLINICS, A QUARTERLY OF CLINICAL LECTURES. Edited by JUDSON DALAND, M.D.; J. MITCHELL BRUCE, M.D., F.R.C.P., and DAVID W. FINLAY, M.D., F.R.C.P. Vol. I., seventh series. Philadelphia: J. B. Lippincott Co., 1897.

THE present volume corresponds in point of interest and merit to those hitherto published. It contains clinical lectures on therapeutics, medicine, neurology, surgery, gynecology and obstetrics, ophthalmology, laryngology and its allied branches, and dermatology. The contributors are all well-known clinical teachers, and the lectures are, as usual, beautifully illustrated.

THE MEDICAL NEWS.

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No. 5.

ORIGINAL ARTICLES.

SOME OBSERVATIONS UPON THE ANATOMY OF THE KIDNEY.¹

BY GEORGE EMERSON BREWER, M.D.,
OF NEW YORK;

ASSISTANT DEMONSTRATOR OF ANATOMY, COLLEGE OF PHYSICIANS AND SURGEONS; ATTENDING SURGEON TO THE CITY HOSPITAL.

THE paper upon the subject of movable kidney presented at the last meeting of this Association by our President, and the suggestion that the members of the Association should make as many observations as possible upon the frequency, causation, symptomatology, and treatment of this condition, and report the same at the present meeting, led the writer to undertake a series of clinical examinations with a view of obtaining some data regarding the frequency of the various forms of renal displacement. Accordingly, during the winter, all patients in whom an abdominal examination was allowable, whether they presented symptoms suggesting movable kidney or not, were questioned and examined with reference to this point. The plan followed was, first, to practice general abdominal palpation, with the patient lying upon the back with the abdominal muscles relaxed. If nothing was found suggesting a displaced kidney, bimanual palpation was employed in each hypochondriac and lumbar region, by placing three or four fingers of one hand behind in the angle formed by the spine and the twelfth rib, the other hand being placed on the corresponding area on the anteriorabdominal wall. If the kidney was not felt by this method, frequently the patient was turned face downward upon the table and the method of Professor Guyon employed. Only a few patients were examined standing, as the rigidity of the abdominal walls in this position precluded the possibility of satisfactory palpation. If by any of these methods the kidney could be felt with sufficient clearness to enable the examiner to be positive of the fact, without his being able to grasp the organ or move it about, the case was recorded as one of *palpable* kidney. If the kidney could be grasped and moved about, but did not descend low enough to enable the examiner to palpate its upper border, the case was recorded as one of *movable* kidney. If the kidney

could be freely moved about and if its upper border could be distinctly palpated below the ribs, the case was recorded as one of *floating* kidney.

During the progress of these examinations it occurred to the writer that it might be of interest to make a series of observations upon the position of the kidney in the dead subject, and to compare the positively accurate *post-mortem* findings with the probably accurate results of clinical examination. Through the kind permission of Dr. George S. Huntington, Professor of Anatomy at the College of Physicians and Surgeons, an opportunity was afforded for examining the dissecting-room material for this purpose. Upon his suggestion, therefore, accompanying each subject placed in the dissecting-room was a printed notice requesting the student assigned to the work on the abdomen to leave the kidneys undisturbed until their measurements had been taken. After the student had finished his preliminary study of the abdominal cavity, the peritoneum over the upper third of the kidney was incised, and the position of the highest point of the upper border noted, with its relation to the lower ribs. This was found in the great majority of instances to be about three inches from the spinal column, and between the upper border of the eleventh and the lower border of the twelfth rib. Owing to the obliquity of the ribs in this location, the kidney might occupy any position between these two points, and still be in the same horizontal plane of the body.

The method of making the observation was to strip off the parietal peritoneum and to feel with the finger for the highest point of the upper extremity, then to turn the finger downward over the superior border of the organ and to feel for the nearest rib. The highest rib touched by the kidney was recorded. If the kidney was found occupying a position below the twelfth rib, the distance vertically upward from the highest point of its upper border and the lower border of the last rib was noted. During these observations the number and general arrangement of the arteries supplying the kidney, and also the occurrence of any abnormalities in the ureter were noted, and, although perhaps not strictly germane to the subject of movable kidney, the facts observed have been added to this report, as they cannot fail to be of interest to those who are accustomed to deal surgically with kidney diseases.

The total number of cases examined was 351. Of

¹ Read at the Eleventh Annual Meeting of the American Association of Genito-Urinary Surgeons, Held at Washington, D. C., May 4, 5, and 6, 1897.

these, 200 were clinical and 151 *post-mortem* examinations. Of the 200 clinical examinations, 142 were males and 56 females. The total number of displaced kidneys found in the 200 clinical examinations was 11, or 5.5 per cent. Of these, 9 were reported as palpable, 1 as movable, and 1 as floating. In the 142 males displacement of the kidney was found but twice; in both instances it was the right kidney and was recorded as palpable. The percentage, therefore, of displaced kidneys found in the males examined was 1.4 per cent. In the 56 females examined displacement of the kidney was noted in 9 instances, or 17.3 per cent.; of these, 7, or 12 per cent., were recorded as palpable, 1, or 1.7 per cent., as movable, and 1, or 1.7 per cent., as floating, all occurring upon the right side. Of the 11 patients in whom movable kidney was found, only 1 complained of symptoms which could be attributed to the displaced kidney, and that was in the case of a floating kidney occurring in a very hysteric female. In two instances, the patients being females, it was positively asserted by them that movable kidneys existed, but in neither case did the most rigid examination reveal any sign which could by any possibility be interpreted as indicating the existence of such a condition.

Regarding the accuracy of these observations, I can only say that in every case recorded as palpable, movable, or floating kidney I firmly believe that the kidney was felt. That a number of displaced kidneys may have escaped detection is highly probable, as in many instances, owing to rigidity of the abdominal muscles or to an excessive deposit of fat it was utterly impossible to approximate the two examining hands sufficiently to appreciate the presence of an organ the size of the normal kidney, and the only sensation conveyed to my fingers was a purely negative one.

Post-mortem Examinations.—Total number of subjects examined, 151. Of these, 91 were males, 56 females, and in four cases the sex was not recorded. A reference to the table which accompanies this report will show that the upper border of the right kidney was found opposite the eleventh rib in 78 cases, opposite the twelfth rib in 62 cases, one-half inch below the twelfth rib in 1 case, and one inch below the twelfth rib in 8 cases. The right kidney had been removed in 1 case. The upper border of the left kidney was found opposite the tenth rib in 1 case, opposite the eleventh rib in 100 cases, opposite the twelfth rib in 43 cases, one-half inch below the twelfth rib in 2 cases, three-fourths of an inch below the twelfth rib in 1 case, and 1 inch below the twelfth rib in 2 cases. The left kidney was congenitally absent in 1 case.

If we consider all kidneys occupying a position below the free border of the ribs as pathologic, the number of displaced kidneys found upon *post-mortem* examination of 151 subjects was 14, or 9.2 per cent. Ten of these occurred in males and only 4 in female subjects. Of the 10 occurring in males, 6 were found upon the right side and 4 upon the left. Of the 3 found in female subjects, 2 were right and 1 left. In one instance in which the sex was not recorded a displaced kidney was found upon the right side.

None of the displaced kidneys was freely movable at the time of the first examination, a fact which was probably due to the *post-mortem* solidification of the perirenal fat. In three instances only was there evidence of the kidney being freely movable during life. In one of these, the subject being a male, the upper limit of the right kidney was situated one inch below the last rib and the lower limit one inch above the anterior superior spinous process of the ilium. The vessels in this case passed very obliquely downward and upward to the hilum, and were covered by a very loose and somewhat folded layer of parietal peritoneum, resembling a mesonephron. The renal artery in this instance measured four and a half inches from its origin to the entrance of the main branch into the hilum.

The other two examples occurred in female subjects and had to do in each instance with the right kidney. The upper border in each case was found one inch below the last rib. One presented a well developed mesonephron, and the other a markedly curved ureter with a very much relaxed and folded condition of the peritoneum covering the pedicle.

In six instances the lower border of the kidney was found within one inch of a line drawn transversely across the abdomen connecting the two anterior superior spinous processes, and could scarcely have escaped detection during life had an ordinarily careful examination been made. Four of these occurred in males and two in females, four upon the right side and two upon the left. These conditions were all found in four subjects, two males and two females. In the males it existed on both sides; in the females on the right side only.

It will thus be seen that, whereas our clinical examinations furnished results which seem to confirm the generally accepted opinion that movable kidney is found more frequently in women, and in the great majority of cases on the right side, our *post-mortem* observations furnished facts which were at variance with these views, as shown in the following table of comparison:

Subject of Investigation.	Percentages found in 200 Clinical Examinations.	Percentages found in 151 Post-mortem Examinations.
Displaced kidney found in both sexes.....	5.5	9.2
Displaced kidney found in males..	1.4	10.9
Displaced kidney found in females	17.3	5.3
Displaced kidney found on right side	5.5	5.9
Displaced kidney found on left side	0.00	3.2

Although the writer is unable to offer any satisfactory explanation of this discrepancy, it may, in a measure, be accounted for by the following facts: First, that the number of observations contained in this report is far too small to enable one to draw any accurate conclusions from their analysis; second, the fact that the kidney may be found firmly fixed in its normal position after death by no means proves that that kidney was not freely movable during life; third, that the data furnished by our clinical examinations probably were inaccurate.

In conclusion, I desire briefly to call attention to a few additional facts observed during the *post-mortem* examinations which may be of surgical interest. The left kidney was congenitally absent in one instance. This occurred in an Irishman, thirty-six years of age, who in other respects was apparently healthy. There was not a trace of the kidney, ureter, or renal artery on the left side. The right kidney was twice as large as normal; its upper border reached the eleventh rib, its lower border extended well into the iliac fossa, and the organ could easily have been palpated during life, as the subject was thin. Great variation was found in the distribution of the arteries to the kidney, eighty-five kidneys receiving more than a single trunk. Of these, seventy received two arterial trunks from the aorta, twelve received three, two received four, and one received five, three of these being from the aorta, one from the ovarian, and one from the common iliac.

Twenty-eight kidneys received arterial trunks or large branches in locations other than the hilum. Of these, nineteen received a large trunk or branch at the upper pole and six received it at the lower pole, all of which might easily have been torn off during a nephrectomy while delivering the organ through a lumbar incision. Three received large trunks on their anterior surfaces, which might easily have been ruptured in attempting to separate the organ from the parietal peritoneum. The spermatic artery in a single instance was given off from the renal, and unquestionably would have been included in a ligature of the renal pedicle. In two other instances the spermatic artery arose from the aorta above the renal, crossed the pedicle near its middle, and probably would have been included in such a ligature. In

ABNORMAL CASES.

No.	Sex.	Side.	Position.	Arrangement of arteries, etc.	Ureter.
1..	F.	R.	11th rib.	2 arteries, at origin 1½ inches apart.	.....
		L.	11th rib.	2 arteries, at origin 1 inch apart.	.....
2..	F.	R.	11th rib.	1 artery, branch to upper pole.	.....
3..	M.	L.	11th rib.	1 artery to hilum.	.....
		R.	12th rib.	2 arteries, ½ inch apart.	.....
4..	M.	L.	11th rib.	1 artery.	.....
		R.	12th rib.	2 arteries same plane, one above the other.	.....
5..	M.	L.	12th rib.	2 arteries same plane, one above the other.	.....
		R.	12th rib.	2 arteries ¾ inches apart. (Large branch to ant. surface.)	.....
6..	F.	L.	12th rib.	2 arteries ½ inch apart.	.....
		R.	12th rib.	1 artery.	.....
		L.	11th rib.	1 artery, branches to upper and middle ant. surface.	.....
7..	M.	R.	Uncertain.	1 artery.	.....
		L.	11th rib.	3 arteries, lower 2, 2½ inches below upper.	.....
8..	?	R.	11th rib.	2 arteries ½ inch apart.	.....
		L.	11th rib.	1 artery.	.....
9..	M.	R.	½ inch below 12	1 artery.	.....
		L.	12th rib.	2 arteries 1 inch apart.	.....
10..	F.	R.	11th rib.	2 arteries ¾ inch apart.	.....
		L.	11th rib.	1 artery.	.....
11..	M.	R.	11th rib.	1 artery, spermatic arises above, crosses renal.	.....
		L.	12th rib.	1 artery.	.....
12..	M.	R.	11th rib.	1 artery.	.....
		L.	11th rib.	2 arteries, upper to upper pole.	.....
13..	M.	R.	1 inch below 12	1 artery.	Complete double ureter.
		L.	12th rib.	1 artery.	Upper one diseased.
14..	M.	R.	11th rib.	1 artery.	.....
		L.	11th rib.	3 arteries. (Upper to upper pole; middle to lower part of hilum; lower to middle.)	.....
15..	F.	R.	1 inch below 12	2 arteries ¾ inch apart.	Curved.
		L.	11th rib.	2 arteries ¼ inch apart; branch to upper pole.	.....
16..	F.	R.	12th rib.	2 arteries, upper to upper pole (small).	.....
		L.	12th rib.	2 arteries, upper to upper pole (small).	.....
17..	F.	R.	12th rib.	2 arteries ½ inch apart, upper to upper pole.	.....
		L.	11th rib.	1 artery.	.....
18..	F.	R.	12th rib.	2 arteries 1½ inches apart.	Anterior to lower artery.
		L.	11th rib.	3 arteries, middle 1, lower 3½ inches below.	Anterior to lower artery.
19..	M.	R.	11th rib.	1 artery (spermatic from renal).	.....
		L.	11th rib.	1 artery.	.....
20..	M.	R.	11th rib.	3 arteries, common origin (½ inch).	.....
		L.	12th rib.	1 artery.	.....
21..	F.	R.	12th rib.	1 artery.	.....
		L.	11th rib.	2 arteries 1½ inches apart.	.....
22..	?	R.	12th rib.	1 artery, 1 branch to upper pole, one to ant. surface.	Double, unites 2 inches above bladder.
		L.	11th rib.	1 artery.	Double throughout.

ABNORMAL CASES.

No.	Sex.	Side.	Position.	Arrangement of arteries, etc.	Ureter.
23.	F.	R.	12th rib.	1 artery	3 from aorta.
		L.	11th rib.	5 arteries	1 from ovarian (small).
					1 from common iliac to lower pole.
				(2 renal veins to ovarian vein.)	
24.	F.	R.	12th rib.	2 arteries, upper small.	
		L.	11th rib.	1 artery, branch to upper pole.	
25.	M.	R.	11th rib.	2 arteries $\frac{1}{2}$ inch apart.	
		L.	11th rib.	2 arteries $1\frac{1}{2}$ inches apart.	
26.	F.	R.	11th rib.	2 arteries, upper to upper pole.	
		L.	11th rib.	2 arteries, upper to upper pole.	
27.	F.	R.	11th rib.	2 arteries (crossed).	
		L.	11th rib.	2 arteries, upper from suprarenal artery.	
28.	F.	R.	12th rib.	1 artery.	Double to $\frac{3}{4}$ inch above bladder.
		L.	11th rib.	2 arteries $\frac{1}{4}$ inch apart.	
29.	M.	R.	11th rib.	1 artery, spermatic arises above, crosses renal.	
		L.	10th rib.	1 artery (double spermatic from aorta).	
30.	F.	R.	12th rib.	1 artery.	
		L.	11th rib.	2 arteries $\frac{3}{4}$ inch apart.	
31.	F.	R.	1 inch below 12	2 arteries $\frac{1}{2}$ inch apart.	
		L.	12th rib.	2 arteries $\frac{1}{4}$ inch apart. (Lower pole of r. kidney opposite ant. sup. sp.)	
32.	M.	R.	12th rib.	1 artery.	
		L.	12th rib.	2 arteries $\frac{3}{4}$ inch apart (crossed).	
33.	M.	R.	12th rib.	1 artery.	
		L.	11th rib.	2 arteries, upper from suprarenal artery.	
34.	M.	R.	11th rib.	3 arteries (upper from aorta; 2 lower from common trunk of phrenic and sup. renal).	
		L.	12th rib.	2 arteries, upper (small) to upper pole (no spermatics).	
35.	F.	R.	11th rib.	2 arteries, lowest to lower pole, $\frac{1}{2}$ inch above bifurcation of aorta.	
		L.	11th rib.	1 artery.	
36.	F.	R.	12th rib.	1 artery.	
		L.	1 inch below 12	2 arteries (crossed).	
37.	M.	R.	12th rib.	1 artery, 2 branches of upper pole.	
		L.	12th rib.	4 arteries, one (small) to upper pole.	
38.	M.	R.	11th rib.	1 artery	No hilum, branches enter slit of anterior surface.
		L.	11th rib.	1 artery	Ureter bifurcates near kidney.
39.	M.	R.	11th rib.	1 artery.	
		L.	12th rib.	2 arteries $\frac{3}{4}$ inch apart.	
40.	M.	R.	11th rib.	3 arteries, middle 3 in.; lower 4 in. below upper.	
		L.	12th rib.	1 artery.	
41.	M.	R.	11th rib.	1 artery.	
		L.	12th rib.	2 arteries $3\frac{1}{4}$ inches apart.	
42.	F.	R.	11th rib.	1 artery.	
		L.	11th rib.	4 arteries (1 small), near at origin.	

ABNORMAL CASES.

No.	Sex.	Side.	Position.	Arrangement of arteries, etc.	Ureter.
43.	M.	R.	11th rib.	1 artery.	
		L.	11th rib.	3 arteries $\frac{1}{4}$ inch apart.	
44.	F.	R.	12th rib.	1 artery.	
		L.	12th rib.	2 arteries, 1 inch apart, lower to lower pole.	
45.	M.	R.	12th rib.	1 artery (vein from kidney enters spermatic).	
		L.	11th rib.	1 artery.	
46.	M.	R.	11th rib.	2 arteries, 4 inches apart, branch to lower pole.	In front of lower artery.
		L.	11th rib.	2 arteries, upper (small) to upper pole.	
47.	M.	R.	1 inch below 12	1 artery.	
		L.	11th rib.	2 arteries, $\frac{1}{2}$ inch apart.	
48.	F.	R.	11th rib.	1 artery.	Double uniting 6 inches below.
		L.	11th rib.	1 artery.	Double uniting $1\frac{1}{2}$ inches below.
49.	F.	R.	12th rib.	2 arteries $\frac{3}{4}$ inch apart, branch to upper pole.	
		L.	11th rib.	2 arteries $\frac{1}{4}$ inch apart, branch to upper pole.	
50.	M.	R.	1 inch below 12	1 artery.	
		L.	$\frac{1}{2}$ inch below 12	1 artery.	
51.	M.	R.	11th rib.	3 arteries, upper to upper pole, lower 1 inch apart.	
		L.	11th rib.	2 arteries $\frac{3}{4}$ inch apart.	
52.	M.	R.	11th rib.	2 arteries 1 inch apart, branch to upper pole.	
		L.	11th rib.	2 arteries $\frac{1}{8}$ inch apart.	
53.	M.	R.	1 inch below 12	2 arteries $\frac{1}{4}$ inch apart.	
		L.	$\frac{1}{2}$ inch below 12	2 arteries 1 inch apart. (Large branch left vein passes under aorta.)	
54.	M.	R.	1 inch below 12	1 artery (4 $\frac{1}{2}$ inches long).	
		L.	$\frac{3}{4}$ inch below 12	1 artery (4 inches long).	
55.	F.	R.	12th rib.	2 arteries $1\frac{1}{4}$ inches apart.	
		L.	11th rib.	2 arteries 1 inch apart.	
56.	M.	R.	11th rib.	1 artery.	
		L.	11th rib.	2 arteries, lower $1\frac{1}{4}$ inches below, to lower pole.	
57.	F.	R.	12th rib.	2 arteries $\frac{1}{8}$ inch apart.	
		L.	12th rib.	1 artery.	
58.	M.	R.	11th rib.	1 artery.	
		L.	.....	(Absent.)	
59.	M.	R.	12th rib.	2 arteries $\frac{1}{8}$ inch apart.	
		L.	12th rib.	2 arteries $\frac{1}{8}$ inch apart.	
60.	F.	R.	12th rib.	1 artery.	
		L.	12th rib.	2 arteries $\frac{1}{8}$ inch apart.	
61.	M.	R.	12th rib.	2 arteries 1 inch apart.	
		L.	12th rib.	2 arteries 2 inches apart (minute accessory).	Above lower artery.
62.	M.	R.	11th rib.	1 artery.	
		L.	12th rib.	3 arteries, upper (small) to upper pole, lower $\frac{1}{2}$ inch apart.	
63.	M.	R.	12th rib.	2 arteries $\frac{1}{4}$ inch apart.	
		L.	12th rib.	2 arteries $\frac{1}{4}$ inch apart.	
64.	M.	R.	.....	(Removed.)	
		L.	12th rib.	3 arteries, upper to upper pole, lower $\frac{1}{2}$ and $\frac{3}{4}$ in. below.	
65.	M.	R.	12th rib.	2 arteries $1\frac{1}{4}$ inches apart.	
		L.	12th rib.	2 arteries $\frac{3}{4}$ inch apart.	
66.	M.	R.	12th rib.	3 arteries, $\frac{1}{8}$ and $\frac{3}{4}$ inch below upper.	
		L.	11th rib.	1 artery.	

ABNORMAL CASES.

No.	Sex.	Side.	Position.	Arrangement of arteries, etc.	Ureter.
67..	M.	R.	12th rib.	2 arteries $\frac{1}{4}$ inch apart.	.....
		L.	11th rib.	1 artery.	.....
68..	M.	R.	11th rib.	2 arteries $\frac{1}{2}$ inch apart.	.....
		L.	11th rib.	2 arteries $\frac{1}{2}$ inch apart.	.....
69..	M.	R.	11th rib.	2 arteries $\frac{3}{4}$ inch apart.	.....
		L.	11th rib.	2 arteries $\frac{1}{2}$ inch apart.	.....
70..	M.	R.	11th rib.	2 arteries 1 inch apart.	.....
		L.	11th rib.	1 artery.	.....
71..	F.	R.	11th rib.	2 arteries $\frac{1}{8}$ inch apart.	.....
		L.	11th rib.	1 artery.	.....
72..	?	R.	1 inch below 12	1 artery.	.....
		L.	12th rib.	1 artery.	.....
73..	M.	R.	11th rib.	2 arteries $\frac{3}{4}$ inch apart.	.....
		L.	1 inch below 12	1 artery.	.....
74..	M.	R.	11th rib.	1 artery.	.....
		L.	12th rib.	2 arteries 1 inch apart.	.....
75..	M.	R.	11th rib.	1 artery.	.....
		L.	12th rib.	2 arteries 1 inch apart.	.....
76..	M.	R.	12th rib.	2 arteries $\frac{3}{4}$ inch apart.	.....
		L.	11th rib.	1 artery.	.....

RECORD OF POST-MORTEM EXAMINATIONS.

Number of subjects examined.....	151
Number showing normal position of kidneys, and having normal arrangement of vessels and ureter.....	75
Number with displaced kidneys or showing anomalies of vessels or ureter.....	76

NORMAL CASES.

Males, 44; females, 30; sex not recorded, 1.

MALES.

Right kidney touched 11th rib in.....	23 cases.
“ “ “ 12th “	21 “
Left “ “ 10th “	1 “
“ “ “ 11th “	31 “
“ “ “ 12th “	12 “

FEMALES.

Right kidney touched 11th rib in.....	20 cases.
“ “ “ 12th “	10 “
Left “ “ 11th “	25 “
“ “ “ 12th “	5 “

SEX UNRECORDED.

Right kidney touched 12th rib.
Left “ “ 11th “

one case two large renal arteries arose from the common trunk with the suprarenal and phrenic.

Considerable variation was observed in the arrangement of the renal, suprarenal, and spermatic veins, but nothing of surgical importance. It may be mentioned, however, that in one instance a large venous trunk from the left kidney passed under the aorta to the inferior vena cava.

A surprising number of variations in the ureter were found, which lead easily to difficulties in diagnosis. For instance, in one subject four ureters were found, two from each kidney. The two from the right united near the bladder, while the two from the left entered the bladder separately. In another subject there were two complete ureters, the one emerging from the upper portion of the kidney being

markedly diseased, as was the pelvis of the organ, while the one from the lower segment of the kidney was perfectly healthy. In two other instances double ureters existed above, but united to form a common trunk below. These and a number of other anomalies of minor importance are fully described in the table which accompanies this report.

SUMMARY OF CONDITIONS FOUND UPON POST-MORTEM EXAMINATION.—POSITION:

The upper limit of the right kidney was found opposite the eleventh rib in 78 cases; opposite the twelfth rib in 62 cases; one-half inch below the twelfth rib in 1 case, and one inch below the twelfth rib in 8 cases. The kidney was removed, or position uncertain, in 2 cases. The upper limit of the left kidney was found opposite the tenth rib in 1 case; opposite the eleventh rib in 100 cases; opposite the twelfth rib in 43 cases; one-half inch below the twelfth rib in 2 cases; three-fourths of an inch below the twelfth rib in 1 case, and one inch below the twelfth rib in 2 cases. The left kidney was congenitally absent in 1 case.

ARRANGEMENT OF STRUCTURES AT PEDICLE.

Number of right kidneys supplied by a single renal artery, 112; by two arteries, 33; by three arteries, 5. Number of left kidneys supplied by a single renal artery, 103; by two arteries, 37; by three arteries, 7; by four arteries, 2; by five arteries, 1. Number of right kidneys receiving large arterial trunk or branch at upper pole, 8; at lower pole, 3. Number of left kidneys receiving large arterial trunk or branch at upper pole, 11; at lower, 3. Number of right kidneys receiving large arterial trunk or branch on anterior surface, 2. Number of left kidneys receiving large arterial trunk or branch on anterior surface, 1. Spermatic artery (right) arising from renal, 1. Spermatic artery (right) arising from aorta above renal, crossing pedicle, 2. Widely separated renal arteries (right) crossing between aorta and hilum, 1. Widely separated renal arteries (left) crossing between aorta and hilum, 3. Left renal branch arising from ovarian, 1; arising from common iliac, 1. Two large renal trunks (right) arising from common origin, with phrenic and suprarenal, 1.

URETER.

Double ureter, complete (left), 2. Double ureter to point three-quarters of an inch from bladder (left), 1; to point two inches from bladder (right), 1; to point six inches from hilum (right), 1; to point $1\frac{1}{2}$ inches from hilum (left), 1. Bifurcation of pelvic at hilum (left), 1. Ureter lying anterior to lower accessory renal artery (right), 2; (left) 2. Ureter markedly curved from malposition of kidney (right), 1.

TYMPANITES.¹

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I wish in this paper to call attention to tympanites intra-intestina, not as a symptom the principal importance of which lies in its diagnostic significance, but as a condition which is often the immediate cause of death. With hysteric tympanites I shall not concern myself.

Abdominal surgeons perhaps best appreciate the dangers of tympany, but I believe that even many who do a good deal of work in this line underestimate its importance. Many patients with abdominal disease die, in whom recovery would occur if the tympany were relieved. In many cases of peritonitis, for instance, drainage of the bowel is scarcely, if at all, secondary in importance, as a remedial measure, to drainage of the peritoneal cavity. One not infrequently meets with peritonitis accompanied by diarrhea, but one seldom sees death result from peritonitis when the bowels are open. Is not the explanation of this fact to be found in the absence of tympany? Tympany seriously embarrasses the lungs and heart, and, as Fenwick has pointed out², may cause sudden heart failure.

B. E. Hadra of San Antonio, Texas, reports a case of general peritonitis cured by intestinal drainage alone, without drainage of the peritoneal cavity³. Henrotin⁴ ascribes the recovery in two of his cases of peritonitis to the formation of an artificial anus. The writer has operated in a case of intestinal obstruction, with a large abscess extending above the pelvic brim, in which he contented himself with forming an artificial anus, postponing the opening of the abscess and the relief of the obstruction *per se* until the woman's condition improved.⁵ The tympany was immediately relieved, the pulse and respiration improved, the bowels moved *per vias naturales* twenty-four hours after the operation, the abscess discharged spontaneously on the second or third day, and the woman is well, save a small intestinal fistula which should be closed by operation.

Given a case of general purulent peritonitis with marked tympany, I would as soon think of closing the abdomen after celiotomy without drainage of the peritoneum as without opening and emptying the gut. Though tympany is most often seen in connection with disease of the peritoneum or of the abdominal or pelvic viscera, it not infrequently menaces life in

other pathologic conditions. The following are cases in point:

Mrs. K. was taken with chill, after having complained for a couple of weeks of a mild bronchitis, and soon developed the usual symptoms of a bronchopneumonia, with considerable plastic pleurisy.

On the seventh day of the disease tympany began to develop rapidly, the pulse grew irregular, rapid, and feeble, respiration became much more embarrassed, and cyanosis was marked. Repeated rectal injections of water and turpentine finally resulted in the expulsion of gas in large quantities, with a subsidence of the more alarming symptoms; recovery ensued, though resolution was very tardy.

Another case almost identical with that of Mrs. K. occurred in the writer's practice in the person of Miss B., the only difference in the two cases being that in the latter the symptoms did not become so alarming, owing, I think, to the lesson I had learned from the case of Mrs. K. Two similar cases in the writer's practice during the past winter ended fatally.

Mrs. W., a patient of Dr. Carl Schilling, was operated on for fibroid of the uterus by the writer, on February 24, 1897. I performed a complete hysterectomy, without drainage. Tympany and vomiting interrupted the convalescence, though there was no tenderness, suppuration, or other evidences of peritonitis or sepsis. The vomiting stopped, and the pulse and respiration, both of which had grown alarmingly bad, improved immediately upon relief of the tympany. There was complete primary union of the wound, but the stitches were allowed to remain in place until the tenth day, on account of the tympanites.

A case of marked tympany, occurring in the writer's practice in the person of a Mrs. M., on the second day after the birth of her first baby, after a natural labor, without any symptoms of sepsis of any sort, convinced him that a bandage properly applied after labor not only conduces to the woman's comfort, but enhances her chances of a speedy and safe recovery.

There are two causative elements present in most, if not all, cases of severe tympany, *viz.*, obstruction to the passage of the gas, and undue formation of gas. The obstruction may be negative or positive, *i. e.*, due respectively to paresis, or to one of the many well known physical causes of obstruction. In many cases a combination of causes exists. For instance, a band may produce an obstruction of the bowel so slight as to attract no attention until an undue formation of gas makes the obstruction complete. It is such cases as this that are cured by simply opening the bowel and allowing the gas to escape. Paresis of the bowel may either be a cause or an effect of tympany, in the latter case being due to distention. It follows, then, that we have the element of paresis to reckon with in many, if not all, cases of severe tympany that have existed for many

¹ Read before the Indiana State Medical Society, May, 1897.

² Osler, "Practice of Medicine," page 403.

³ *New York Medical Journal*, June 2, 1894.

⁴ *American Journal of Obstetrics*, August, 1893.

⁵ *American Journal of Surgery and Gynecology*, October, 1895.

hours. I have opened a distended bowel on more than one occasion only to find that it could not empty itself, and it had literally to be stripped in order to relieve the abdominal distention.

The effect of atropin upon the muscular structure of the bowel should be borne in mind when using this drug, particularly in abdominal cases. In many cases of tympany the distention is practically confined to the large intestine, and, as Sweetnam¹ has pointed out, this is particularly true of tympany coming on after celiotomy, and is due to the "downward pressure of the descending colon and sigmoid flexure upon the upper portion of the rectum, forcing the folds of Houston one upon the other, and bringing about, in this way, what is for the time in effect an impermeable stricture."

The prophylactic treatment of tympany should never be neglected in cases in which it is apt to occur. Thorough evacuation of the bowels by salines, the internal administration of antiseptics such as salol and salicylic acid, a diet of food not prone to fermentation, combined with the judicious administration of strychnin and the use of the abdominal bandage, has in a large degree robbed tympany of its terrors for the abdominal operator. The same means will accomplish the same ends in cases other than those requiring abdominal surgery. The measure of success which shall attend our efforts in the treatment of tympanites will depend very largely upon the time the treatment is commenced. This should be instituted when the condition first manifests itself, for delay is dangerous. The giving of cathartics is worse than useless in the presence of pronounced paresis, and under the same circumstances the rectal tube and enemata will be of little avail. The utility of the latter in some forms of bowel obstruction, together with its inutility and actual harmfulness in some kinds of obstruction, are well known, and need not occupy our time here.

To Sweetnam, to whose papers I have already referred, belongs the credit of priority in recommending the postural treatment of tympany. He had observed that relief could often be secured by elevation of the hips, and was in the habit of employing position in the treatment of this condition, but he says that he did not fully appreciate "the amount of alteration which takes place in the rectal folds when one is placed in the knee-chest position" until, while watching Howard Kelly making a rectal examination, he was able to see the folds of Houston disappear into the rectal wall, and the gut straighten out. The treatment is harmless in all cases, but useless in Sweetnam's experience, in cases of general peritonitis. I am not surprised that he should obtain

no results from this method in general peritonitis, for here the distension is in the small bowel, and it is only in distention of the colon that it could be effective. The knee-chest position is considered best, but the elevation of the foot of the bed, with the patient on the side, will usually be effective in cases of moderate distention. Personally, I have had no experience with this method, but shall certainly try it when the opportunity offers.

Notwithstanding that the statistics collected by Ogle¹ seem to show that puncture of the intestine, multiple if necessary, is fraught with little danger and is usually successful in relieving the distention, it certainly seems unsurgical, to say the least, and should be resorted to only in cases in which opening the abdomen is entirely out of the question. This measure should be employed, however, in my opinion, when death is threatened by tympany, in cases which have resisted milder means and in which celiotomy could not be borne.

I believe that in all cases, whether abdominal or not, in which tympany threatens life, and persists in spite of the usual methods to combat it, the abdomen should be opened and the gut incised and emptied. Exceptions should be made in favor of puncture in cases in which celiotomy would prove fatal. If the patient's condition permits, the incision into the bowel should be closed after the gut is emptied, and the abdominal wound closed. As a rule, of course, one should seek to relieve the cause of the tympany at the same time that the tympany itself is removed, but, as indicated above, this is not always advisable. It will often be found better to leave bowel obstructions, pelvic abscesses, etc., for a future operation, when the patient will be better able to stand the shock. Under such circumstances, the cause of the detention remaining, it will usually be necessary to make an artificial anus instead of closing the bowel and returning it to the abdomen. I wish to say, and I speak from experience, that the operation here advised can be successfully performed in the case of patients who seem almost at Death's door.

I think I am warranted in concluding as follows:

1. That intra-intestinal tympany in and of itself often kills patients suffering from abdominal and pelvic disease, and that it may do so in cases which are neither pelvic nor abdominal.
2. That tympany occurring in the course of any serious illness should be considered a symptom of ill omen, and that measures for its relief should promptly be instituted.
3. Failing to obtain relief by cathartics, posture, enemata, and the use of the rectal tube, celiotomy and incision of the gut should be promptly done.

¹ *Annals of Surgery*, March, 1896.

¹ *MEDICAL NEWS*, February 9, 1899.

4. In cases of general peritonitis and bowel obstruction, no trial should be made of other methods, but celiotomy and incision of the gut should be performed as soon as the diagnosis is made.

5. Puncture of the bowel should be carried out only in cases in which the patient is *in extremis*, and then only in cases such as typhoid fever without perforation, pneumonia, etc., which present no other cause for celiotomy than the tympany itself.

THE NEWER PREPARATIONS OF BISMUTH.

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ABOUT three years ago I published, in the *Post-Graduate*, my investigations upon certain definite chemic compounds of bismuth with phenol, naphthol, and tribromophenol. At that time I summarized my results from the cases of more than one hundred patients who had been treated with these preparations. I believed that a real advance had been made toward attaining intestinal antiseptics.

The use of bismuth internally is too ancient to admit of argument as to its value. The soluble salts have a limited use, for, so far as our knowledge goes, they act similarly to those of mercury. The subcarbonate and subnitrate, in view of recent discoveries, certainly have a limited use. The former, on account of its generation of carbon dioxid gas in certain combinations, could well be dispensed with altogether. The subnitrate has its only special use in the treatment of gastric ulcer, where its high specific gravity gives it a certain advantage, and this is, in my personal practice, its only use and even here I believe that the naphtolate should be administered coincidentally.

Of the three preparations to which my former paper was mainly devoted, I have found that the bismuth naphtolate (bismuth oxid, 80 per cent., and betanaphthol, 20 per cent.) is of the greatest value. This preparation is decidedly antiseptic, if Jasenski's experiments in Nencki's laboratory are trustworthy, and, besides, observation certainly confirms them. It is partly decomposed in the stomach, but the process is completed in the small intestine. The naphthol is partially, a small part I believe, eliminated by the kidneys and a larger portion passes entirely by the bowels. The bismuth is eliminated by the bowel as a sulphid, but the rapid disappearance of odor cannot be entirely due to this chemic combination.

Several observations show that there exists a marked antiseptic action from the use of this preparation. One of the most severe instances of intes-

tinal putrefaction which I have ever encountered occurred in the person of a veteran of the Civil War. This man was wounded by a fragment of shell which carried into the liver portions of clothing, which lodged in that organ. During two years there was continual suppuration, with discharge of foreign matter, before healing was complete. When the patient came under my observation the liver was not palpable, and percussion showed the area of flatness to be diminished to one-sixth its normal degree. In this case the discharge of gas was so continuous, and in such large amounts, that although no sphincteric incompetency existed, one could readily believe that the fecal odor which surrounded the patient was due to that condition. The enormous distention, the secondary results, and the disturbance of nutrition rendered the patient's condition truly deplorable. A faithful administration of the bismuth naphtolate not only relieved the patient of the offensive odor and limited the tympanites, but gave great comfort and improved his nutrition, so that within a month he expressed himself as being completely relieved. This relief has persisted under the administration of the drug for the past two years.

Of the typhoid fever patients who have come under this treatment during the first week or ten days of their illness, none have presented the classic symptoms, and all had a low temperature without marked abdominal symptoms, and without, as a rule, any indication for further medication. Neither diarrhea, fetor, or tympanites occurred. There was no fear of perforating ulcerations, for there is but little opportunity for ulceration in a bowel in which there is no fermentation going on. Obviously, in patients who are markedly septic after expectant tubing, or after no treatment has been instituted, another plan must be pursued. These are instances of bad management, and are septic cases in which all remedies which benefit general septicemia are applicable.

Following Hueppe, bismuth tribromophenolate has been used extensively; its use is similar to that of the naphtolate. Of late, I have not used this preparation as extensively as the naphtolate, although its sweetness and astringency are certainly of advantage. The phenolate has proved its utility in a large number of instances of gastric fermentation. From the use of neither of these drugs have I observed toxic symptoms, and frequently I have administered them to the amount of 90 to 120 grams daily. Their harmlessness can be attributed to the fact that they slowly decompose and the phenol is not set free much faster than it can be eliminated. My observations have been confirmed by Fischer, Engel, Chaumier, and many others, and can be considered accurate and re-

liable. I have but little to add to and nothing to retract from the statements which I made three years ago.

The most important addition to the therapeutic uses of bismuth naphtholate is in the treatment of the diarrheas of patients suffering from pulmonary tuberculosis. It is well known that next to the complication of tuberculous laryngitis, diarrhea is the most unfortunate. Even a few days of profuse discharges will undo the work of weeks. In several instances a rapid increase of the dose of the naphtholate to 60 or even 120 grains daily has given brilliant results; in one patient, however, there was utter failure, and in his case no drug or combination of drugs was of any avail.

During the past year I have employed in the cases of thirty-five patients a drug chemically known as bismuth tetra-iodo-phenol-phtaleinat (endoxin). This is an insoluble, reddish-brown, odorless, tasteless powder, which contains 52.9 per cent. of iodine and 14.5 per cent. of bismuth. It is claimed that it is non-toxic, and it is believed to decompose in the presence of alkalis into bismuth oxide and tetra-iodo-phenol-phtalein; therefore, it should pass through the stomach unchanged, and the last-named drug should be dissolved in the intestinal contents. Since this is soluble, not only will the contents of the bowel be disinfected, but also the intestinal walls, and the drug again be excreted into the intestine. I was induced to experiment with this drug by the following facts: (1) Lieven reports a permanent and energetic antiseptic action on the bacteria of pus and saprophytes; (2) the dose (5 to 8 grains thrice daily) is smaller than of similar preparations; and (3) I believe that the effect of the contained iodine upon the intestinal glands may be a beneficial one. On the other hand, I was prepared to find the lower bismuth percentage a disadvantage, and the possibilities that the contained iodine might prove to be an irritant.

Fourteen of the patients treated with this drug suffered from chronic intestinal catarrh; of these, six presented coincident hepatic and cardiac lesions. Naturally, the latter class would be benefited by drugs which would influence the liver and heart, but I am sure that the benefit was more rapidly obtained than it would have been without the use of the bismuth preparation. Three patients presented intestinal fermentation, with discharges of muco-pus, considerable pain, and foul-smelling stools; these experienced relief, although one required treatment for several months. One patient, who suffered from the above symptoms, was relieved as far as fetid stools and mucous discharges were concerned, but the pain and distention persisted. In this instance there was no reason to suspect malignant disease, and doubtless intestinal adhesions were the cause of the permanent

disability. Four patients suffered from simple intestinal fermentation. These were permanently relieved, although in one instance nearly five months elapsed before treatment could be suspended. Two patients, both women, suffered from exfoliative membranous enteritis; both were put to bed and received high intestinal irrigation with salol, with a carefully arranged diet and general supervision of all matters which were conducive to restoration of health. In addition, the drug was used in maximum doses. Both patients have now passed some months (one, three, the other, two) without the passage of shreds or membranes.

Nine patients presented symptoms of both gastric and intestinal catarrh. They all improved, but not so rapidly as could have been wished until resorcin in 5-grain doses was given before meals. The final result was satisfactory. One patient, markedly lithemic, was partially incapacitated by the extreme fermentation which followed his two principal meals. In addition to the intestinal symptoms, there was excessive irritability of temper and fits of unaccountable melancholy. The drug, even with careful attention to hygiene, failed, while excessive amounts of chlorin water (U. S. P.) succeeded in causing a cessation of fermentation. Acute dysentery, tenesmus, blood-streaked stools, fever, and hepatic tenderness were relieved within ten days. But little can be said of this patient; the cause and variety of his complaint was not well studied. Recent cases have been far more amenable to treatment.

No opportunity had been offered for the use of the drug in the long-standing chronic fevers, which are the really difficult ones for establishing intestinal antiseptics, until finally two patients presented themselves suffering from acute catarrhal duodenitis, with cutaneous itching, absorption jaundice, tender liver, and clay-colored and offensive stools. Both were relieved, so far as their intestinal symptoms were concerned, although calomel in small doses (gr. $\frac{1}{10}$) at hourly intervals was given. Both presented well-marked conditions, and, I am sure, obtained relief from the intestinal decomposition with more than usual rapidity. I have met with no distinctively toxic symptoms. However, one of the women who suffered from chronic membranous enteritis developed an iodine-acne which, although not severe, prejudiced her so much against the drug that she would not admit the benefits which it was evident that she derived from its use. The drug was not irritant in the patients under observation, although I believe that the effect of the iodine content of the drug upon the glands of the intestine is to render the stools less consistent. I have had no experience with the remedy in either the diarrhea of the tuberculous or in typhoid fever.

The drug was generally administered as a powder, diluted with equal parts of milk sugar; very rarely was it given as a compressed tablet.

From this brief survey of the results of the administration of the newer bismuth preparations, we may conclude:

1. That the use of the organic in place of the inorganic bismuth compounds should be insisted upon.
2. That the compounds of bismuth with betanaphthol, phenol, tribromophenol, and tetra-iodophenol-phtalein are remedies which produce practical intestinal antiseptics.
3. That they are indicated in all gastro-intestinal fermentations and catarrhs until the symptoms are relieved, the dose to be determined by the severity of the symptoms.
4. That they are non-toxic and do not give rise to untoward symptoms.

CLINICAL MEMORANDA.

A CASE OF PULSATING PLEURISY.

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UNIVERSITY OF COLORADO.

W. C., male, five and one-half years of age, of tuberculous parentage, was first seen by me on December 31, 1895, at which time he complained of pain in the left side, cough, and dyspnea. Upon examination, I found him to be very anemic, and the whole left side of the chest was flat, with the exception of an area of Skoda's resonance at the apex. The usual signs of effusion were present, the apex beat being two inches to the right of the sternum. The whispered voice was heard over the entire left chest. A diagnosis of serous effusion was made, and on the following day Dr. O. J. Pfeiffer aspirated and withdrew thirty ounces of serum. The heart returned to its place, and the dyspnea was wholly relieved. The child improved steadily, although moderate dulness reappeared in the lower part of the chest, posteriorly. As he was eating well and gaining in weight, he was dismissed during February, the dulness having nearly disappeared and the general health being almost restored.

On March 7th I was sent for in haste, the mother stating that "the child's whole left side was beating." She informed me that the boy had been feverish during several days and had not felt as well as before. I found his temperature to be 102.8° F., and his pulse 144 to the minute. The apex beat was one and one-half inches to the right of its normal position, the cardiac dulness corresponding. The left side of the chest was flat upon percussion, as before, except that the dulness was less extensive. The whole lower left chest, to the posterior axillary line, pulsated synchronously with the heart, this being noticed both by inspection and palpation. Slight edema existed over most of the pulsating area. There was no bronchophony, as in the case of the former effusion.

The child was immediately removed to St. Luke's Hospital, and the following morning, after verifying the presence of pus by aspiration with a hypodermic syringe, was operated upon by Dr. Pfeiffer, the usual permanent opening and drainage being employed. It was estimated that twenty ounces of pus were evacuated. No gas escaped from the pleural cavity, and the pus resembled in gross appearance that of an ordinary empyema. The child made a slow but uneventful recovery. The heart is now displaced slightly to the left of the nipple line, as a result of contraction of the left lung following its compression. I have no doubt that this result could have been avoided had the child's relapse been promptly reported to me.

It should be further stated that at the time of operation the pulsation, much to my surprise, had nearly disappeared. I have since noted that it has been recorded in several cases that the pulsation was present only when the patient was placed in certain positions, being absent especially in the recumbent posture in several.¹ In this case the first examination was made while the child sat in its mother's lap, and the second, after the child was stripped and laid upon the operating-table. It has occurred to me, also, that possibly the less forcible cardiac action, at a time when the temperature is commonly lowest, may have entered as a factor into the case, since the first examination was made in the late afternoon and the second in the early forenoon.

No sufficient explanation of the exact causation of this curious phenomenon has been advanced. Personally, I believe that different factors, in different combinations, enter into its causation in different cases. Thus, in a case of Wilson's,² pulsation persisted after the performance of Estländer's operation. Effusion and pneumothorax were certainly not to be considered here, unless we conceive of a possible undiscovered encapsulated effusion in the upper half of the chest, of which there was not the slightest evidence. Adhesion of the lung, especially if atelectatic, to the pericardium might reasonably account for such pulsation.

Edema existed over the greater part of the pulsating region. Paralysis of the intercostal muscles has been prominently mentioned as one of the causes of the pulsation. It has been thought in some cases that the purulent effusion had worked through the muscular tissue, and that the consequent loss of support to the contents of the chest was a factor in its causation. It seems reasonable to suppose that in this case, as in many others reported, the edematous infiltration of the muscle, which caused it in a great degree to lose its contractility, assisted in bringing about the pulsation, the normal elasticity of the muscular walls of the thorax serving to "take up" the pulsating impulse. This theory would apply to cases of empyema also, as an inflammation or edematous infiltration of the diaphragm, which impairs its function and prevents it from acting as an elastic cushion in keeping the contents of the abdomen from encroaching upon the thoracic cavity, might be of importance in the genesis of the pulsation.

¹ Janeway.

² THE MEDICAL NEWS, July 15, 1893.

Féréol's hypothesis, that pneumothorax is an essential element in these cases, certainly could not have applied in this instance, since none of the signs of this affection were present, nor did gas escape from the opening. Increased intrathoracic pressure, an important feature in many cases, did exist, since the fluid escaped in a vigorous jet upon opening the pleural cavity. Toulmin¹ has stated, however, that this increased pressure is not essential.

The latest statistics, as given by Fuchs,² record but eighty-two cases of this condition, the present case bringing the number up to eighty-three. It is thus still sufficiently rare to make the publication of each new case desirable.

THE TREATMENT OF CHRONIC ULCERS BY THE THIERSCH METHOD OF SKIN- GRAFTING.

By JAMES M. PARROTT, M.D.,
OF KINSTON, N. C.

IN all cases of chronic ulcer it is of extreme importance to differentiate between the idiopathic and traumatic origin of the lesion and to institute constitutional treatment in accordance with the findings. As is well known, syphilis plays a very important rôle in the production of ulcers, and if the presence of this disease is even remotely suspected in a given case the patient should at once be placed upon antisiphilitic treatment, and this continued until the system is thoroughly under its influence before attempts at curing the local lesion should be undertaken. Likewise, a patient afflicted with malarial cachexia, in addition to a chronic ulcer, should be placed upon Fowler's solution of arsenic and tincture of the chlorid of iron, and anemic patients should be given a chalybeate preparation during a period of many weeks.

If the ulcer is due to the breaking down of varicose veins, these vessels should be ligated, excised, or obliterated by means of Vienna paste, or a roller or Martin bandage should be worn continually. Tuberculous patients should receive appropriate tonic treatment, and after thorough cleansing the ulcer should repeatedly be dusted with iodoform until it assumes a healthy appearance. The same treatment should be pursued in cases of senile ulcer, and patients suffering from chronic lead poisoning should be given increasing doses of iodid of potash.

The treatment of the ulcer, preparatory to skin-grafting, is of such vital importance that success or failure depends almost entirely upon the faithfulness with which it has been carried out. Infiltrated tissue should be cut away with scissors or knife, and unhealthy surfaces thoroughly curetted. Necrosed bone should be removed, and if eczema has developed near the site of the ulcer the skin should be washed thoroughly with an ethereal soap and borated talcum or powdered oxid of zinc applied. Ordinary soap, grease, and ointments should not be used in this connection.

The instruments necessary in the operation of skin-grafting are few, a sharp razor, two olive-pointed silver

probes, and curved and flat scissors, with, perhaps, a dull curette, answering every purpose. In the way of dressings, a number of cheese-cloth pads, the size of a man's hand, gauze bandages, and a piece of oiled silk is all that will be required. If the surface of an ulcer be covered by healthy granulations, I never hesitate to graft at once, after thoroughly cleansing it with a solution of carbolic acid, or with a 1-to-3000 solution of mercuric bichlorid. These solutions do not endanger the integrity of the grafts, as has been held by certain authorities; the mercurial solution, especially, stimulates the growth of healthy granulations, particularly when applied during the preparatory treatment, and its use is undoubtedly a factor in the good results obtained.

In the application of the dressings one important point should be borne in mind, and that is, the danger which may result from too long-continued use of the oiled-silk protective, maceration of the underlying tissue, and consequent failure of the grafts being a not uncommon sequel. After the grafts have carefully been placed edge to edge over the entire surface of the ulcer, I am in the habit of applying two layers of oiled-silk strips (from a quarter to a half inch in width), the second layer being at right angles to the first, and so arranged that meshes of sufficient size permit of the escape into the gauze pads of any discharge from the ulcerated surface. Maceration or softening of the grafts is thus entirely prevented.

The grafts should be as thin as it is possible to make them, and preferably should be taken from the anterior surface of the thigh, the skin having been thoroughly cleansed and made aseptic. No general rule can be laid down as to the time which should elapse before the wound should be redressed subsequent to the operation, but it is my custom to change the pads and bandages on the second day, and again on the fourth day, at the latter time removing the oiled silk and dusting the surface with subnitrate of bismuth. Two days later, the bismuth is removed and a simple antiseptic dressing applied. The surface from which the grafts have been taken is treated in about the same manner.

The cases here reported in which this method has been employed have been chosen from a score or more, each representing a different form or type of ulcer. I may add that the method in my hands has never resulted in failure, except in one instance, the case being an exceedingly unfavorable one. This patient, however, received great benefit. The Thiersch method is much to be preferred to that of either Reverdin or Wolf. In the Reverdin method the grafts are too frail, and the resulting scar too prominent, while in the Wolf method the grafts are liable to be too thick, and consequently harder to manage and less likely to grow on the new site. According to my experience, the chronic ulcer grafted by the Reverdin method is almost certain to recur.

Cocain will usually answer as an anesthetic in these cases, though general anesthesia sometimes will be necessary in the cases of very nervous individuals and babies.

The cases which I wish to report are as follows:

CASE I.—L. S., aged twenty-one, white. Gave a very positive syphilitic history. When first seen he exhibited

¹ Quoted by Osler.

² *Zeit. für Clin. Med.*, 1897.

a large ulcer on the anterior part of the leg, probably directly produced by an injury received four years previously. He had been unsuccessfully treated by physicians for three years. The ulcer was foul, ragged-edged, and covered with lymph. A poultice of charcoal and flaxseed was ordered and continued for three days, and antisyphilitic treatment was begun at once. On the third day, the ulcer was dressed with moist bichlorid of mercury gauze (1 to 2000), and later, a bichlorid of mercury drip (1 to 5000) was ordered. This was continued for ten days, and, the ulcer then being in a healthy condition, it was grafted by the Thiersch method, the patient being discharged permanently cured, thirty days later.

CASE II.—J. K., aged sixty-two, painter by occupation. When first seen his health was very bad; he was much emaciated, weak, and anemic. Sure and positive symptoms of chronic lead poisoning were exhibited. He had a chronic ulcer of ten-years' standing. The leg was in such bad condition that amputation was at first thought to be necessary. He was given iodid of potash in increasing doses and put to bed, the ulcer being dressed daily for fifteen days with moist 1-to-3000 bichlorid of mercury dressings. This was followed by the bichlorid of mercury drip for four days. The tibia being diseased, it was chiseled and curetted thoroughly, and all of the necrosed bone removed. The mercurial dressings were reapplied and continued for thirty days. Granulations soon formed over the bone, and the ulcer was then grafted by the Thiersch method. The ulcer was three by four and one-half inches in size. In due time the patient was discharged, cured.

CASE III.—M. C., aged sixty-three. When first seen he exhibited a well-marked varicose ulcer on the left leg. The veins were treated very successfully by ligation, and the ulcer prepared by using a daily moist dressing of bichlorid of mercury gauze, preceded by curetting, to remove a heavy coat of lymph and disorganized blood left from frequent hemorrhages. As soon as the granulations formed and became strong (thirteen days after curetting), the ulcer was grafted by the Thiersch method and the patient was cured.

CASE IV.—I was called in consultation to see W. H. T., who exhibited an irritable ulcer, the leg being much swollen and very painful, the patient's temperature being 102.5° F. The ulcer was apparently healthy, but very densely red, the slightest touch causing very acute pain. Save a slight malarial cachexia, the young man seemed to be in good health. The ulcer was of six-years' duration. A moist bichlorid dressing (1 to 3000), preceded by the application of a four-per-cent. solution of cocaine, was applied, and rest in bed, with light diet, ordered. He was given an iron tonic, with Fowler's solution of arsenic. Improvement was very rapid, and eleven days after seeing him I grafted the ulcer by Thiersch's method, with perfect success.

CASE V.—J. L. N., aged seventy-five. When seen this patient had an ulceration about the size of a silver dollar on the left temple, midway between the outer canthus and the ear. A diagnosis of epithelioma, which was afterward confirmed by the microscope, was made.

He readily consented to its removal, which was done the following day. Immediately after the operation the surface was grafted by the Thiersch method and the patient was discharged, cured, almost without a scar. The whole treatment occupied ten days.

CLINICAL LECTURE.

ENDOCARDITIS; ITS DIAGNOSIS AND TREATMENT.¹

By EDWARD F. WELLS, M.D.,
OF CHICAGO;

PROFESSOR OF MEDICINE IN THE CHICAGO POST-GRADUATE MEDICAL SCHOOL.

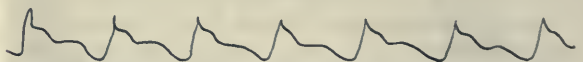
THAT endocarditis runs its course in a very considerable proportion of cases to well-marked valvular deformity, or, rarely, to a fatal termination, without recognition, is a fact of current information. The necessity for these numerous diagnostic failures I believe to be open to challenge, and the appearance of this patient, with a recently developed endocarditis, affords me an opportunity to call your attention to some of those salient and diagnostic points in the symptomatology of the affection by which it may be recognized, in the vast majority of instances, even in its incipency.

That form of endocarditis which is marked by the appearance of vegetations and which is followed by valvular deformity, and to which my remarks are confined, occurs, usually, as a complication of acute rheumatism, chorea, or tonsillitis; much less frequently in connection with influenza, pneumonia, gonorrhea, scarlatina, erysipelas, puerperal fever, and other infectious diseases; rarely as a primary affection. Acute rheumatism is by far the most frequent cause of endocarditis, and the relationship existing between these, and the resulting valvular deformity as well, is an essential, and not merely an accidental one. Endocarditis occurs in about thirty per cent. of rheumatic attacks—occurring oftener in males than in females; oftener in the young than in the old; oftener in the acute and severe cases, with many joints implicated, than in those pursuing a milder course and affecting only a single joint. It usually appears before the end of the second week, although it may be delayed to a much later date or it may precede or follow the articular manifestations of rheumatism.

The patient before us gives the following history:

CASE I. *Acute Rheumatism; Endocarditis.*—R. W. aged twenty-five, had gonorrhea three years ago, and chancre, without systemic manifestations of syphilis, one year ago. When he first appeared in the clinic he had been ill one week with acute rheumatism, the tarsal joints of both feet being affected. He had slight fever, the temperature being 99.6° F.; normal cardiac action; pulse 82, and a tracing as follows:

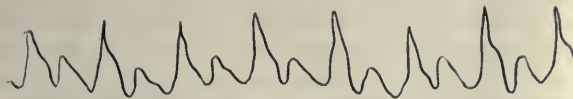
FIG. 1.



One week later the temperature was 101° F., and the pulse was about 100, being irregular and dicrotic in character, as shown in the tracing:

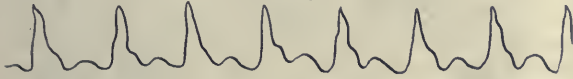
¹ Delivered at the Chicago Post-Graduate Medical School.

FIG. 2.



There was also present a marked vibratile tremor of the cardiac region. To-day, after having been sick for one month, his temperature is 99° F., pulse 98, tracing as follows:

FIG. 3.



The cardiac tremor continues and the apex beat has moved outward to the nipple line. There has been no murmur audible, but the mitral first sound has gradually assumed a booming quality which is now quite marked. There have been no subjective cardiac symptoms except a sensation of "quivering," which is noticed only when the patient's attention is directed to the heart.

In the next case the endocardial preceded the articular inflammation:

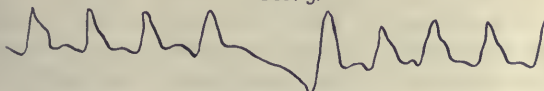
CASE II. *Endocarditis; Pericarditis; Tonsillitis; Rheumatism; Recovery with Mitral Regurgitation and Compensatory Hypertrophy.*—P.C., aged thirty-seven, an athletic man, was first seen September 30, 1895. During each of the four preceding winters he had had severe attacks of quinsy; aside from this his health has always been good. Two months previously he was taken with chilliness, fever, vomiting, and cough, followed gradually by increasing weakness, cardiac tremor, oppression and cold perspirations on exertion, orthopnea, and dyspnea on awakening from sleep, and cough with free expectoration of bloody serum and mucus. Examination revealed moist bronchial râles generally diffused, increased area of cardiac dulness, with a marked irregular vibratile tremor, indistinct cardiac sounds, with a soft and low-pitched apical systolic murmur, audible only in recumbency, cyanotic and clammy skin, and an anxious expression. The temperature was 98.6° F., and pulse 104 lying, and 112 sitting, with tracing as follows:

FIG. 4.



On October 24th pericarditis, with some effusion and profuse acid perspirations, began, and on November 19th there developed a sharp attack of quinsy. Rapid and decided improvement of general and local conditions followed, with clearer cardiac sounds and more distinct murmur. Early in December the following tracing was made:

FIG. 5.



On January 9, 1896, after exposure, acute rheumatism set in, and affected in turn nearly all the joints of both lower extremities, confining the patient to bed during four weeks.

At the present time, two years after the beginning of his cardiac affection, the patient feels well, and is actively

employed. There is palpitation and oppression only upon excessive exertion. The murmur is present, and the action of the enlarged heart is powerful. The tracings are now as follows:

FIG. 6.



This when at rest. Moderate exercise, such as walking half a mile, changes the character of the pulse as shown in the next tracing:

FIG. 7.



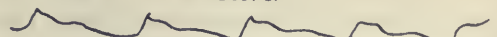
It is quite clear that there is yet a lack of that nicety of balance and reserve force which further cardiac hypertrophy may bring about.

In the next case the endocarditis followed the subsidence of the acute rheumatic symptoms:

CASE III. *Rheumatism; Hemoptysis; Herpes Zoster; Tonsillitis; Endocarditis, followed by Mitral Insufficiency.*—Mrs. S. W., aged thirty-five, was inoculated with syphilis at twenty-nine, which resulted in cutaneous eruption, loss of nails, etc., but after two years there were no further manifestations noticed. On December 23, 1892, she was taken with a chill, followed by high fever and pain in the right thumb. On the fifth day the left knee became affected and here, with some temporary shifting, the seat of local inflammation remained throughout the illness. During the first week there was much delirium, with hallucinations. On the fourteenth day there was hemoptysis to the extent of half an ounce, without cough or other premonitions. On the seventeenth and eighteenth days there was agonizing pain in the epigastrium, with vomiting and hiccough. There was permanent subsidence of the fever on the twenty-fifth day, with pain only when the knee was moved. She first walked on the fifty-sixth day. On March 17, 1893, herpes zoster developed on the left side of the chest. On March 27th, tonsillitis developed, with high fever for forty-eight hours. Following the tonsillitis there was considerable prostration, with profuse non-acid perspirations during sleep. On April 10th there was a cardiac tremor and the pulse was rapid and dicrotic. On May 23d, a blowing systolic murmur was noted in the mitral area. One year later there was anemia with palpitation and oppression on exertion, and with dyspnea when lying supine, especially when tired.

During the entire course of the illness careful examinations were made of the heart and pulse, once or twice daily during the acute stages, and once or twice a week subsequently, and at no time previous to April 10th were there any symptoms indicative of endocardial involvement, and this applies also to examinations made previous to the rheumatic attack. Numerous sphygmographic tracings were made, selections from which, with dates appended, are shown:

FIG. 8.



December 27th—Fifth day.

FIG. 9.



January 4th—Thirteenth day.

FIG. 10.



January 10th—Nineteenth day.

FIG. 11.



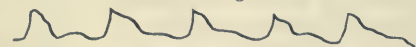
February 5th—Forty-fifth day.

FIG. 12.



April 10th—Endocarditis.

FIG. 13.



May 26, 1894.

The diagnosis of endocarditis is seldom made with ease. By carefully reviewing all the features of the case its presence may usually be recognized, either positively or with reasonable assurance, although in a certain proportion of cases it must run its course unsuspected. Subjectively the cardiac or other sensations in endocardial inflammation are not of a nature to direct the patient's attention toward his heart; yet, discrete and careful questioning will often elicit information as to symptoms, which, taken in connection with others, are suggestive and of diagnostic importance. Thus, although pain is rare in uncomplicated cases, there is frequently present, in the region of the heart, an undefinable sensation of heaviness or discomfort. Thoracic oppression, perhaps with palpitation, on suddenly changing the posture is often noticed. Weakness is almost always a marked feature.

Objectively you will find the symptoms much more distinctive. Elevation of the corporeal temperature, which is usually moderate, rarely high, sometimes very slight, but almost always positive, is an important symptom and may be the only one present. In the course of an attack of acute rheumatism or other disease which is liable to be complicated by endocardial inflammation, an increase of temperature, or its persistence at a time when it should subside, without other obvious reason is a suspicious circumstance. The type of the fever is usually an irregularly continuous one, although in some cases it may be remittent, intermittent, or erratic. Careful study of the pulse, with the finger, and especially with the sphygmograph, will furnish information of the greatest diagnostic value. For the patient, the individual characteristics of his pulse are usually radically and permanently changed. The primary change is due to cardiac irritability and, later, to myocardial weakness, while the secondary ones are chargeable to the consequences of valvular insufficiencies. In frank cases the early alterations of the pulse are very marked and will scarcely escape your notice. The pulse is accelerated, the arterial expansion is great but the ten-

sion is low, diastolic is often present, and the rhythm may be irregular, either constantly or at times. The pulse alterations bear no relation to the stage or state of the rheumatism or other primary affection, or to the general condition of the patient. Changes in the heart sounds usually appear after the endocarditis has existed for a considerable time, although they occasionally develop with remarkable rapidity, or they may be long delayed, evanescent, or may remain absent. The murmurs which you will observe oftenest and earliest are a systolic apex murmur, which arises suddenly, and diastolic murmurs, which are variously located and gradually developed. These murmurs are of very uncertain value when they are employed as measures of the extent and severity of the valvular inflammation. However, in my own experience, loud and obstrusive murmurs which have arisen early, during the febrile period, have been of uniformly bad augury. A recent endocarditis may have its signs obscured by a previously existing valvular deformity or by those due to a complicating endocarditis. The occurrence of embolism, erythema nodosum, or chorea, should always lead to inquiry as to the presence of endocarditis.

The treatment of endocarditis demands your most serious consideration, but its prevention will first engage our attention. Usually endocarditis is an early complication of rheumatism, chorea, and allied diseases and, therefore, if prophylactic measures are to be of any service whatever they must be promptly instituted. Abundant experience has shown that salicin, salicylic acid, and salicylate of soda are useful antirheumatic remedies, and one of these should be given in full doses. Forty years ago the theory, which was apparently demonstrated, was that the endocarditis was due to the effects of free lactic acid in the circulation, and, inasmuch as rheumatic patients continue to have acid perspirations, you will not be amiss in prescribing alkalis. Recent investigations point more or less strongly toward the bacterial origin of the valvular inflammation and you may desire to introduce a bactericide into the circulation. Sulphuretted hydrogen is an agent of this class which may safely be employed in large and probably efficient doses. "Washing the blood," by draining away the serum by hydrogogue cathartics and restoring the volume of the blood by large hypodermic injections of normal saline solution or, more certainly by venesection, followed by intravenous injections of saline solution, is a measure worthy of being given an extended trial. To soothingly modify the irregular, excited, and embarrassed action of the heart, and to transfer the bulk of the blood to the venous side of the circulatory system, veratrum viride should be given. In addition to the special measures which have been mentioned, the patient should have careful nursing, with, as far as is practicable, mental and physical rest, and confinement to the bed or couch. The skin should be kept gently acting, with hot air or sponge baths, or dry rubbing, as may be indicated, and the surface should be covered by suitable woolen underclothing and protected from draughts. The bowels should be kept open, with occasional free catharsis, and the kidneys stimulated to free action. The diet should be light and nutritious, with an abundance of fluids.

In private practice, for an adult with acute rheumatism, I usually write the following prescriptions:

℞ Sodii salicylas 3 iv
Fl. ext. verat. virid. gtt. xcvi
Ol. menth. pip. gtt. vi
Elix. simp. rub., q.s. ad 3 iii.

M. Sig. A teaspoonful every two to four hours, as directed.

The nurse is directed to give the medicine every two hours at first, but to lengthen the interval if the ears should become affected or nausea ensue.

℞ Calcii sulphid (Merck's) 3 ii
Ulmus pulv. 3 i.

M. (dry), ft. supposit. (using hollow suppositories) No. xx. Sig. One, three, or four times a day.

Should endocarditis be already present in its early stages, or develop in the face of your well-directed preventive efforts, the treatment above outlined still is indicated. After a few days the veratrum viride will certainly, and the salicylate will probably, require to be diminished in dose or altogether suspended. They should, however, be resumed with recurring indications or any tendency to relapse. With the subsidence of the fever and other symptoms of inflammation, the sulphid of lime should be discarded and agents employed which may promote absorption of inflammatory exudates. For this purpose iodid of potassium has largely been given, but I prefer to use corrosive sublimate. At this period in the progress of the case there generally is present anemia and, with advancing valvular insufficiency, dilated chambers and a weakened myocardium. To meet these indications, the patient should have rest with, possibly, passive exercise, a nutritious diet which is not bulky and contains as little fluid as possible, and a prescription as follows:

℞ Strychniæ gr. i
Hydrarg. chlorid. corrosiv. gr. iss
Ferri redact. gr. xxx
Digitalis ext. gr. x
Gentian ext. q.s.

M. ft. pil. No. xxx. Sig. One pill three times a day for five days in each week.

With the disappearance of all inflammatory action and cessation of the deposition of fibrinous exudates upon the surface of the valves and in the fibrous tissue of the rings, and the gradual development of the full measure of valvular insufficiency, with compensatory hypertrophy, or, unfortunately, uncompensated dilatation, other and vitally important problems are offered for solution, but these fall beyond the scope of this lecture.

MEDICAL PROGRESS.

Lavage of the Blood Through the Medium of the Stomach.—MAUSEL suggests (*Rev. d. Thérapéut.*, May 15, 1897) that in the discussion about the "lavage of the blood," which can be accomplished by subcutaneous and intravenous injections of artificial serum, the use of the digestive tract as an agent for absorption has been overlooked. Absorption by this route is less rapid, but equally as sure, as by the other, and the subsequent diuretic ac-

tion is just as efficacious. This is the revival of the administration of "cooling draughts."

Preliminary blood-letting is important, as it removes a part of the poisonous material and also favors the absorption of the saline solution into the circulation.

Beneficial Effect of Ingestion of Lung in Pulmonary Tuberculosis.—GRANDE (*Rev. d. Thérapéut.*, May 15, 1897) wishing to give to a patient, suffering from phthisis in the second degree, one pound of healthy lung tissue daily, found that its equivalent was from 4 to 5 grams (1 dram) of the dessicated pulmonary tissue, which he administered in tablets. This treatment was continued for five months. During this time the cough nearly vanished, bacilli became rare in the sputum, and the patient gained twelve pounds in weight.

A series of control experiments was conducted with guinea-pigs, three of which were inoculated on November 7, 1896, with tuberculous sputum. One of them, receiving no subsequent treatment, died in fifty-three days with disseminated tuberculosis of the lungs, liver, and spleen. The other two were treated with the powdered lung, boiled in distilled water and then filtered. Three months after the inoculation they were living, presenting no sign of tuberculous trouble, and apparently well.

Granular Ophthalmia Treated with a Mixture of Guaiacol and Glycerin.—For a year past BENTÉJAC (*Rev. d. Thérapéut.*, May 15, 1897) has treated all the cases of granular ophthalmia at his eye clinic with a mixture of guaiacol and glycerin, 1 to 100 or 1 to 200. All of the patients who persisted in the treatment received greater or less benefit.

The advantages of this remedy are its powerful congestive action and its freedom from danger and pain. Under its use the mucopurulent secretions diminish and disappear, and with these vanish the superficial ulcers of the cornea. The pannus grows thin and disappears altogether after one or two months. One or two applications are made each day, or one application may be made in the morning and a soothing application in the evening.

As a result of this treatment the circulatory activity is greatly increased, the granulations are vascularized and the infective agent and its toxins are discharged. Caustics act in the same way, but their destructive chemic action makes one dread their contact with corneal ulcers—a fear which is not present when a weak solution of guaiacol is employed.

A Quick Method of Epilation in Tinea.—According to JOLKOFF (*Rev. d. Thérapéut.*, May 15, 1897), epilation in tinea can be greatly facilitated by the use of strong adhesive plaster, applied warm in strips over the affected areas. When thoroughly cool these strips are peeled off in the direction opposite to that in which the hairs grow, *e. g.*, from the forehead backward for the frontal region, and from the neck upward for the occipital region. If this precaution is observed the plaster will extract the affected hairs while leaving the sound ones.

Operative Treatment of Pott's Disease with Deformity.—LANGE has modified Calot's *redressement brusque* in Pott's

disease (*Münch. Med. Wochenschr.*, April 20, 1897). The originator of this plan of treatment put the chloroformed patient on his face, and while two assistants made strong traction on the head and feet, and two others supported the chest and pelvis, Calot pressed with all his strength on the greatest prominence of the deformity until it gave way, and with a loud crack the spine straightened out. A plaster-of-Paris bandage was put on from head to pelvis and worn three or four months, and then renewed and followed by a corset. Calot has not had any paralysis as a result of this treatment. If the spinous and transverse processes are fairly well preserved the result of this straightening of the spine is to give more room for the spinal cord.

Lange believes a considerable part of the improvement which followed Calot's treatment is due to the situation of his hospital beside the ocean. His method of procedure is to put on the day previous the portions of the bandage which surround the head and pelvis. This shortens the period of narcosis considerably. Then by suspending the patient by a couple of bands in a horizontal position two of the assistants may be dispensed with.

THERAPEUTIC NOTES.

The Practical Importance of the Gonococcus.—Neisser has shown the importance of a microscopic, instead of a macroscopic, examination in order to make a diagnosis of gonorrhea in the female. In the medical examination of prostitutes in German cities, this plan has been followed only in Breslau, and more recently in Stuttgart. In the latter city, according to HAMMER (*Centralbl. für Chirurgie*, May 15, 1897), the urethral secretion is examined every week, and that from the cervix every four weeks. Those women in whom gonococci are found are placed in the hospital for treatment. The uncertainty of a macroscopic examination was at once shown, and since the introduction of the microscopic method the number of prostitutes treated in the hospital for gonorrhea has greatly increased.

The author recommends treatment of the urethritis with ichthyol. For uterine gonorrhea he employs a swab saturated with a five- or ten-per-cent. solution of chlorid of zinc. Infection of Bartholin's glands is treated by cauterization with nitrate of silver fused upon a probe.

For the Bronchial Catarrh of Heart Disease.—

℞	Ammoniac	} aa	3 ii
	Tinct. tolut.		
	Tinct. digitalis		3 i-ii
	Morphinæ sulph.		gr. ss
	Pulv. acaciæ		3 ii
	Aquæ, q.s. ad		℥ vi.

M. Sig. One tablespoonful every three or four hours.

The Following Formula for the Administration of Diuretin is Recommended:

℞	Diuretin		4-6 parts
	Aq. menth. pip.		100 parts
	Aq. destillat.		90 parts
	Syr. simp.		10 parts.

M. Sig. Two tablespoonfuls every two or three hours.

For Gastralgia.—

℞	Codeinæ sulphat.		gr. iii
	Ext. cannab. indic.		gr. ii
	Ext. nucis vom.		gr. iii.
	Ft. Pil. No. XII.		

M. Sig. One pill three times daily after meals.—*Ashton.*

An Excellent Sedative Antipyretic Mixture for a Child.—

℞	Antipyrin		gr. xxiv
	Sodii bromidi		gr. xlv
	Syr. lactucarii		℥ ii.

M. Sig. 3 ss. when necessary for restlessness.

A Useful Sedative in Simple Endocarditis is the Following Combination:

℞	Tinct. Aconiti		m. xxiv
	Potass. bromidi		3 ii
	Aq. camphoræ, q.s. ad		℥ iii.

M. Sig. Two teaspoonfuls every two hours.—*Henry.*

A Good Diuretic Mixture in Heart Disease Where Digitalis is not Contraindicated is the Following:

℞	Pulv. digitalis	} aa	gr. xx
	Pulv. scillæ		
	Pulv. scammonii		gr. xl.
	Div. in chart No. XX.		

M. Sig. One powder three times daily.

Lotion for Facial Erysipelas.—

℞	Carbolic acid	} aa	2 parts
	Tincture of iodine		
	Alcohol	}	4 parts
	Turpentine		
	Glycerin		6 parts.

M. Sig. Apply every two hours and cover with sterilized gauze.

Camphor as an Antigalactagogue.—HERRGOTT (*La Semaine Méd.*, June 2, 1897) has prescribed camphor in order to dry up the milk of mothers who do not desire to nurse their children. It is given in doses of six grains three times a day for three consecutive days. In thirty cases in which it was employed the results were almost invariably swift and satisfactory.

Antipyrin and Arsenic in Chorea.—According to MARFAN (*La Presse Méd.*, May 29, 1897), the best results are obtained in the treatment of chorea from the use of antipyrin and arsenic administered in the following manner: Antipyrin should be given in a liquid, the daily dose being divided into three equal parts, one to be taken with each meal. Beginning with a daily dose of forty-five grains, fifteen grains in addition are given each day until ninety grains are reached. This amount is given daily until the choreaic movements have notably diminished. Fifteen grains less of the medicine is then given each day until forty-five grains are reached, at which point the medication is continued for some days longer.

There are a few obstinate cases of chorea which are not affected by antipyrin, but which yield to continually increasing doses of arsenious acid, best given as Fowler's solution, well diluted. The dose may be increased until symptoms of intolerance appear or until half a grain of the acid is given daily. Children usually bear large doses of arsenic well. If it is necessary to add to this treatment a hypnotic, chloral will be found of service.

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SATURDAY, JULY 31, 1897.

MOVABLE KIDNEY.

At a recent meeting of the American Association of Genito-Urinary Surgeons, held in Washington, an interesting and instructive discussion occurred upon the subject of movable kidney.

Three papers bearing upon this subject were presented. The first of these was read by Dr. Francis S. Watson of Boston, who gave the results of some interesting observations made during a series of *post-mortem* examinations upon subjects having well-marked evidences of this condition. Thirty-eight subjects chosen at random in the dissecting-room were examined. In eight of these movable kidneys were found; four in the male, and an equal number in female subjects. In five of these the peri-renal fat was markedly diminished. In four of the eight there were well-marked evidences of ptosis of other organs. Dr. Watson called especial attention to the fact, that kinking of the ureter, which is supposed to give rise to colic, nausea, and urinary disturbances, was more easily caused by a rotation of the displaced organ, than by simple descent.

The second paper, entitled "Clinical Observations on Loose and Displaced Kidney," by Dr. John

P. Bryson of St. Louis, brought out several interesting facts. From a number of careful observations made upon living subjects during operations, he also was led to believe that rotation of the organ was responsible for most of the painful symptoms observed during the acute attacks. He was convinced that the attacks of pain were, in the majority of instances, due to congestion of the organ, from twisting of the blood-vessels, rather than to an accumulation of urine in the pelvis from kinking of the ureter. In his experience, gastric symptoms were only associated with displacements or lesions of the right kidney, and could be explained by the intimate connection between the right kidney and the duodenum. An observation which had invariably forced itself upon him was that frequent and painful micturition, when associated with this condition, was always due to a kinking or lesion of the ureter, in its lower segment.

The third paper, by Dr. Brewer of New York, entitled "Some Observations upon the Surgical Anatomy of the Kidney" is published in the present number of the NEWS. In this the writer records the result of two hundred clinical and one hundred and fifty-one *post-mortem* examinations. In his clinical series of observations, displaced kidneys were found in 5.5 per cent. of all the cases; in 14 per cent. of the males and in 17.3 per cent. of the females—in every instance upon the right side.

These observations are in accord with the generally accepted view that renal dislocation is found most frequently in women, and upon the right side. In his *post-mortem* examinations, however, displaced kidney was found twice as frequently in males as in females—a fact not hitherto observed.

It is to be hoped that these papers and the discussion which followed, will serve to draw the attention of the medical profession to this frequent cause of suffering in both sexes, and to correct in a measure the general impression which has been held by many, and not infrequently expressed by the general surgeons, that movable kidney was a gynecologic fad.

THE EMPLOYMENT OF PRISONERS.

ABOUT two years ago THE MEDICAL NEWS, in commenting upon this subject, said: "We do not know of any example of popular legislation that equals in folly and wickedness an amendment to the New York

State Constitution recently offered to the people for ratification which prohibits the employment of prisoners at productive labor."

It was pointed out that the folly of this act consisted in depriving the State of the benefit of labor which was making its penal institutions nearly self-supporting, and its wickedness in immuring prisoners in solitary cells who, without labor, must necessarily undergo physical, mental, and moral deterioration.

The truthfulness of this exposition was to be vindicated more promptly than the writer knew. It is not an unusual thing for inmates of penitentiaries to become insane, for it is a well-founded belief that many perpetrators of crime are at the time of their unlawful acts suffering from more or less mental derangement. But the remarkable increase in the number of those who have become insane in the State penitentiaries since the law prohibiting convict labor went into effect, points strikingly to a lack of employment as the predominating cause.

A commission recently appointed to inquire into the sanity of suspicious prisoners held in the Kings County Penitentiary pronounced no less than seven out of twenty, hopeless maniacs. Since January 1, 1897, the average number of prisoners in this institution has been 775; during this time 18 have become insane. Comparing this with the same period of the previous year, we find that the average number of prisoners at that time was 1200, 19 of whom became insane. It will therefore be seen that with nearly fifty per cent. less convicts in the prison during the last seven months, there has been only one less case of insanity. Moreover, in not a single case of the seven men above referred to who have become insane during the latter period, can there be found a trace of hereditary or occasional insanity previous to their incarceration, and all have become insane since the new law went into effect. It is a striking fact that only one woman has become insane in this institution during a period of four years. But the women are never idle, being engaged in scrubbing, cleaning, washing, and mending or making clothes. On the other hand, the majority of the male convicts are confined to their cells twenty-two out of the twenty-four hours of every day.

The state of affairs existing in Kings County Penitentiary is no exception to what is being experienced in the other penal institutions of the State; nor

can any responsibility for the large number of prisoners who have become insane be ascribed to improper management of this institution. The officer who inspects State prisons where Federal prisoners are confined, stated in his last report that the Kings County Penitentiary was the best appointed and best conducted of all prisons in this country where Federal prisoners are incarcerated.

The sufferings attendant upon the method of confinement made necessary by the present law can only be appreciated by those who are compelled to guard these wretches as they sit in their solitary cells conscious of the horrible fact that reason is gradually slipping away. The horrors of the situation are brought home to us in the account as given in the *New York Sun* of one of the prisoners in the institution mentioned, who before his incarceration had given evidences of rather unusual cleverness, although, unfortunately, his inventive genius was directed to unlawful ends. He had invented a sort of "jimmy" very useful in opening safes. About a year from the date of his confinement the warden noticed that this prisoner was becoming morose and melancholy. One day the keeper told him to cheer up. "Cheer up! cheer up!" he said. "Ah! that is easy for you to say with plenty of work to do. Give me something to occupy my mind save my own miserable thoughts and I will take a brace. If you don't give me something to do, some day I will cheer you with the howls of a maniac. I am going mad—I know it—but all I can do is to watch my reason slip away. That's a thought to cheer a man, isn't it?" Within a month from that time the wretched prisoner's premonitions were realized.

A similar fate awaited another prisoner, who has always stoutly maintained his innocence, and whose friends are so convinced that he is innocent of the crime for which he was sentenced that strenuous efforts have been made to secure his pardon. With nothing to occupy the man's mind save the thought of his pardon, and with hope deferred from day to day, his reason broke down under the strain and suddenly, instead of stoutly maintaining that his pardon would soon arrive, he greeted his keepers one morning with a wild glare, made a dash for the barred door, and fastened his teeth in the grating. Then he started back yelling, "I eat pardons, I do, and I eat the devils that grow them. I have

gone mad, I have. To hell with pardons. Lunatics cut their throats with pardons."

Such scenes as these are familiar occurrences in asylums, but when the responsibility for the de-thronement of reason clearly rests upon the administration of unwise laws it is time for the community in which they occur to pause and consider.

It must not be forgotten that the object of penal institutions is not to rob men of their reason, but to protect the community from those who are too vicious to be allowed their freedom, and to throw about them all such disciplinary provisions as will engender in them industrious habits with the hope that they may be restored to healthful citizenship.

ECHOES AND NEWS.

Plague-Stricken Bombay.—It is reported that there has been an alarming increase of death from cholera in the Bombay Presidency and some recrudescence of the bubonic plague.

Death from Antipyrin.—A death after taking two 10-grain doses of antipyrin is reported from England. The drug was taken by a chemist's assistant for the relief of neuralgic toothache.

Death of Dr. Oliver S. Flint.—Dr. Oliver S. Flint recently died of neuralgia of the heart at his home in Hartford, Conn., in his sixty-fifth year. He had been in practice more than thirty years.

Scarlet Fever in a Sweat-shop.—It is reported from Albany that a factory inspector has recently discovered two cases of scarlet fever in a sweat-shop in Brooklyn where clothing was being manufactured.

An Appropriation for the Kings County Hospital.—The Aldermen of Brooklyn have appropriated \$17,000 for the construction of a new administration building for the Kings County Hospital at Flatbush.

Old Age in Massachusetts.—According to the census of 1895 there are thirty-five centenarians in the State of Massachusetts. Of this number thirty are women. The oldest one of all, however, is a man, aged 111 years.

Oculist to Examine the Kaiser's Eye.—Duke Charles Theodore, the Bavarian royal oculist, has been summoned to Kiel to examine Emperor William's eye, which was recently injured by a swinging rope on the Imperial yacht.

Newport Hospital Appointments.—The following have been elected consulting physicians to the Newport R. I. Hospital: Drs. W. T. Bull, E. S. F. Arnold, Clement Cleveland, H. E. Knapp, H. R. Storer, and H. G. Mackaye.

Leprosy in Jersey City.—The Board of Health of Jersey City has recently ordered the removal to the pest-house

of a man suffering from leprosy. The patient is a man, thirty-six years of age, who has the disease in its tuberculous form.

Foreigners May Become Doctors.—The Supreme Council of Education in Paris has adopted a provision by which foreigners are enabled to obtain a doctor's diploma, permitting them to practice in France, by undergoing an examination at French universities.

Death of Dr. W. Thomas Atkins.—The death of Dr. W. Thomas Atkins of Toronto has recently been announced. Dr. Atkins was for many years surgeon to the Toronto General Hospital, and was President of the Toronto Medical School for nearly twenty years.

No Medical Registration in India.—There is no medical registration in India, nor is there any Medical Act in that country to govern or regulate the conduct of practitioners of medicine, to protect them in the exercise of their calling, or to defend the public from quackery in its many guises.

Bubonic Plague at San Francisco.—A ship recently arrived from Calcutta is held in quarantine at San Francisco on account of the presence on board of what is supposed to be bubonic plague. One of the crew died during the voyage from Calcutta, and two of the men are ill with the same disease.

Indian Barracks Disease.—The news comes from Simla that the Vice-Regal Legislative Council has adopted a bill restoring the Cantonment Act of 1889. The object of this action is to restore to the Governor-General in Council power to regulate prostitution and check the spread of venereal disease in the Indian army.

Knocked Speechless.—A Hudson county, N. Y., girl was knocked speechless not long ago by being run into by a bicycle. She was otherwise badly injured, and it was thought that she would not recover, but she has gradually improved and now is practically in normal health, except that she has not recovered her speech.

Bullet in the Pericardium Located by the X-Ray.—A lateral skiagraph was recently made of the upper portion of the body of a Chicago man who had been shot in the breast. The photograph showed the bullet firmly lodged in the pericardium, it having followed a downward course for a distance of two inches after entering the thorax.

Camp Cholera at Sea Girt, N. J.—It is reported that this disease has assumed the proportions of an epidemic at the New Jersey State camp, there being at one time more than 200 men under treatment. The regimental surgeons believe the epidemic to be due to a combination of miserable weather, artesian water, and too much "high jinks."

It may Prevent Contagion.—At a recent meeting of the Board of Aldermen, a resolution was passed requesting the Commissioner of Street Cleaning to provide paper bags for accumulations of paper, especially in tenement houses, these bags not to be returned. This arrangement, it is hoped, may assist in preventing the spread of contagious diseases.

Koch on the Bubonic Plague.—Professor Koch has made a report giving the result of his investigations into the bubonic plague. Experiments were made upon 1400 cases. He says that the bacillus possesses but little vitality outside of the bodies of men and animals, and adds that Professor Haffkine's serum possesses undoubted protective qualities.

Death of Surgeon-General Herbert Taylor Reade, V.C., C.B.—The death at Bath, Eng., of Surgeon-General Herbert Taylor Reade, V.C., C.B., Honorary Surgeon to the Queen, has been announced. He was born in 1828, entered the army as an assistant-surgeon in 1850, and retired with the rank of surgeon-general in 1887, at which time the Queen created him a C.B.

A Therapeutic Bacillus.—In an official report made to the Colonial Government by Mr. Hankin of India is described a new bacillus which has recently been discovered by a young Parsee physician, Dr. Ghadiali. This bacillus is said to have the peculiar power of destroying the enteric and other allied micro-organisms. The microbe has been named the "micrococcus Ghadiali."

Deceptions to Avoid Discovery of Plague.—According to the *British Medical Journal* the natives in India resort to all sorts of devices to avoid detection of cases of plague in their dwellings. In one instance a party of searchers discovered a number of natives playing cards and among them was a dead man who had been hurriedly propped up and a few cards thrust into his hand.

No Sunstrokes in Texas and Arizona.—In these days of sunstroke in the North and East, the distant parts of the country are congratulating themselves. The *Galveston (Texas) News* proclaims that there has not been a death or prostration from heat in Texas this summer, and the *Phoenix (Arizona) Republican* says that in that Territory prostrations from heat are unknown.—*N. Y. Times*.

An English Quack Punished.—The maker of a "patent truss" in England was recently sentenced to eighteen-months' imprisonment at hard labor for defrauding the public. By means of misleading advertisements and testimonials appropriated from the trade circulars of various truss-makers, many persons were induced to purchase a worthless article at double the price charged for a good truss.

Mouth Breathing in Consumption.—According to an English observer, nearly fifty-five per cent. of the population are mouth-breathers. Phthisical patients, who readily tire and get out of breath, are especially liable to form this habit and to be injured by it. They should therefore either live in places protected against dust and wind, or should wear respirators whenever the weather is unsuitable.

The Annual Meeting of the Chautauqua County Medical Society.—The annual meeting of this Society was held at the Hotel Athenæum, Chautauqua, N. Y., on July 13, 1897. The following officers were elected for the ensu-

ing year: President, Dr. Morris N. Bemus; vice-president, Dr. V. M. Griswold; secretary and treasurer, Dr. Charles A. Ellis, Delegates to State Society meeting: Drs. E. S. Rich and C. A. Ellis.

In Jail for Signing Fraudulent Medical Certificates.—The news comes from Harrisburg, Pa., that Dr. W. L. Duff, a practitioner of long standing, has been sentenced to three months in jail for signing fraudulent medical certificates attached to applications to the Mutual Life Association of Binghamton, N. Y. The applications were forgeries and the physician made no examination of the persons named in the certificates.

The New General Hospital of Hamburg.—Dr. A. Jacobi, chairman of the American National Committee of the Twelfth International Medical Congress, is in receipt of a letter from Dr. H. Kümmell, surgical director of the New General Hospital (Neues Allgemeines Krankenhaus) of Hamburg, inviting American physicians who attend the Congress at Moscow to stop at Hamburg and inspect the hospital and the new hygienic establishments.

The Jubilee and Women Doctors.—In connection with the jubilee, the compiling of the advances and progress of medicine during the past sixty years, recalls the fact that in 1859 the first female physician, Dr. Elizabeth Blackwell, was registered in England. It was not until 1865, however, that an English medical diploma was granted to a woman—Mrs. Garrett Anderson. In 1892 women were admitted to membership by the British Medical Association.

Medal of Honor to Dr. Blackwood.—The news comes from Washington that Dr. William R. D. Blackwood of Philadelphia has received a medal of honor for most distinguished gallantry at Petersburg on April 2, 1865. Dr. Blackwood was surgeon of the Forty-eighth Pennsylvania Volunteers, and the medal was conferred for "removing severely wounded officers and soldiers from the field while under a heavy fire of the enemy, exposing himself beyond the call of duty."

Electric Clarification of Wine.—Otho Reinke, in the *Wochenschrift für Brauerei*, describes a new process for the clarification of fermented liquors. It was found that clarification takes place rapidly if a vessel containing wine or beer in the process of fermentation be illuminated by sunlight, and Herr Reinke was led by this fact to try the effect of electric light with the result that he obtained rapid and complete clarification by hanging arc-lamps near the fermenting liquors.

London's Thirst.—Despite its house water supply, its 712 drinking fountains used daily by 2,500,000 persons (to say nothing of 476 small troughs for dogs and sheep, and 286 large troughs which are patronized by 500,000 horses), London consumes daily 485,000 gallons of beer, or 177,000,000 gallons yearly; 5500 gallons of wine, 16,000 gallons of spirits, 187,000 of aerated water, and as much tea as can be drawn from 8000 pounds, besides coffee, cocoa, and other beverages.

Dr. Janeway in Bellevue's Faculty.—It is officially announced that Dr. E. G. Janeway has been elected Professor of Medicine and President of the Faculty of Bellevue Hospital Medical College. The other professors in the department of General Medicine are as follows: A. A. Smith, M.D., LL.D., Professor of Principles and Practice of Medicine and Clinical Medicine; H. M. Biggs, M.D., Professor of Therapeutics and Clinical Medicine and Adjunct-Professor of Principles and Practice of Medicine.

The Indian Territory Medical Association.—At the regular semi-annual meeting of the Indian Territory Medical Association, held at South McAlester, I. T., June 29 and 30, 1897, the following officers were elected for the ensuing year: President, Dr. E. N. Allen, South McAlester, I. T.; first vice-president, Dr. G. W. West, Eufala, I. T.; second vice-president, Dr. J. B. Rolet, Oklahoma City, O. T.; secretary, Dr. LeRoy Long, Caddo, I. T. The next meeting of the Association will be held at Muskogee, I. T., December 7 and 8, 1897.

Surgery to Make a Cruel Cure.—Three years ago a man in St. Louis shot and killed his sweetheart and then attempted unsuccessfully to take his own life. His skull, however, was fractured by the bullet. Upon his recovery, he was tried and sentenced to be hanged, but while awaiting the day of execution the man became insane, and has been in an asylum ever since. As his insanity is supposed to be due to the presence of new bone at the site of injury, it is proposed to remove this, after which, if he recovers his reason, he will be returned to the prison authorities and duly hanged.

He Wants the Rouss Million.—An Englishman, who has lived in India for forty-two years, where he has mastered the mysteries of Oriental occultism, is desirous of coming to New York to restore the eye-sight of Charles Broadway Rouss. Mr. Rouss, however, does not believe in the miraculous powers of the man to the extent of paying the traveling expenses of the healer and his retinue, which would amount to about \$10,000, so he has telegraphed him not to come. The offer of \$1,000,000 to anyone who will restore Mr. Rouss' sight still holds good, however. His loss of sight is due to atrophy of the optic nerves.

Floating Hospital Struck by Lightning.—The Floating Hospital of St. John's Guild, New York City, was struck by lightning while coming up the bay one day last week. A child was killed in its mother's arms and the premature birth of a baby was caused by the same shock. Dr. Charles Leale who examined the body of the dead child found a red dark mark three inches wide and fifteen inches long on the skin over the spine, with a blistered spot at the end of the streak. The child's dress was burned as if by fire. The new-born baby was also found to have a red streak three inches wide along the back of its head and down the spine:

Disease in Athens.—Dr. Zavitziano, the United States Sanitary Commissioner, now in Greece, reports to Sur-

geon-General Wyman that over 25,000 refugees have crowded into Athens from Thessaly and Epirus, and it is feared that the Sultan's delay in accepting the ultimatum of the powers may result in a sweeping epidemic. Nearly 20,000 of the refugees are dependent on charity for daily food. The water is of poor quality and not abundant and with the slightest wind the town is enveloped in clouds of dust, spreading infection and favoring consumption, which latter already causes thirty per cent. of the deaths in Athens.

No Appropriation for Medical Investigation.—A supply bill recently passed by the New York Legislature contained an item appropriating \$10,000 for the Medical Department of Buffalo University to investigate the causes, nature, and treatment of cancer. Governor Black, however, vetoed the appropriation, saying, "I cannot approve a proposed policy which requires the State to engage in an investigation of the causes of various diseases with which the human family is afflicted. I think that the interests of the people themselves and the skill, intelligence, and enterprise of physicians may be depended upon to make an investigation."

Statistics of Carbolic-Acid Poisoning.—It is suggested that some restriction be placed upon the sale of carbolic acid on account of the fact that of late years it has so frequently been used for suicidal purposes. Dr. Dixon Mann, in an article in the May number of the *Medical Chronicle*, shows that one-third of the males and very nearly one-half of the females who poisoned themselves during the year 1895, did so with carbolic acid. In other words, out of a total of 580 deaths from poison, no less than 224 were due to the use of carbolic acid. The inference is that the ease with which the drug can be procured acts as a direct incentive to suicide.

Is Murder on the Increase?—The statistics of the superintendent of New York State prisons show that the number of executions in this State has greatly increased since the electrocution law took effect in 1890. Forty executions have occurred since that date, while there were but 230 hangings in the history of the State before that time. This is an increase of 200 per cent. and more. The increase is supposed to be due to one or both of the following causes: Juries, believing in the humanity of the present system of execution, are more willing to convict, and the place of execution being removed from the county where the criminal is known, there is less likelihood of applications for executive clemency.

Plague Ship Wrecked.—Word comes from Liverpool of the arrival there of the widow of the captain of the fever-smitten British ship "Traveler," which was wrecked February 4th off Rodrigues Island in the Indian Ocean, 330 miles from Mauritius. The ship was bound from Java to Delaware Breakwater, and soon after leaving the former port Java river fever attacked everybody on board, and many died. Only two of the crew with the mate were able to work when the ship neared Rodrigues Island. A pilot refused to board the vessel when he learned of the

pestilence, and upon his return to the island reported that all on board were stricken with yellow fever. They were not allowed to land, and no assistance was given them. That night the ship was wrecked on a reef. The survivors were then taken off and transferred to a desert sand island, where they were quarantined for twenty-two days.

Medical Inspection of Schools in Chicago.—The June report of the Chicago Department of Health gives the result of the first year's work in the medical inspection of schools which was instituted September 3, 1896. Of the diseases reported diphtheria was the most prevalent—744 individual reports of cases among school children led to the disclosure of 2619 cases at home. There were 231 school cases of scarlet fever and 745 home cases. Forty-six reported cases of measles led to the discovery of an epidemic prevalence of this disease in several sections of the city during November, 1896, and again in May and June, 1897. In October an epidemic of impetigo contagiosa spread through seven schools of the north division of the city, but was arrested in a few weeks, after excluding 107 cases from the schools and instituting proper preventive measures. Two schools were found afflicted with pediculosis to such an extent as to demand radical treatment. One case of tuberculosis was found at school in such an advanced stage as to justify exclusion from school attendance; this patient died before the close of the school year.

Decision of New York Court against a Doctor.—Forty-four dollars and fifty cents for medical services was sought to be collected, as upon an "account stated," in the case of Callahan against (Margaret) O'Rourke. The evidence for the plaintiff was: That he rendered services as a doctor for the defendant's husband in his lifetime. That, upon one of his calls, defendant's husband paid him \$1. After the husband's death, the doctor presented his bill for such services to the defendant. She paid him \$5, and offered to pay him \$20 in settlement of the bill, saying to him that he had better take \$20 or nothing. No evidence was given upon the part of the defendant. The justice rendered judgment in favor of the doctor. The defendant appealed to the county court, which affirmed the justice's judgment. Thence she appealed to the Appellate Division of the Supreme Court of New York, which latter reversed the judgments of the courts below, with costs and disbursements in those courts, May 26, 1897. It holds that the facts proved were not, under the circumstances, sufficient to establish an account stated between the parties. The doctor's own evidence showed that all the services rendered by him were for the defendant's husband personally. There was no pretense that the defendant ever employed him, or in any way suggested or requested that he attend her husband. There were never any dealings between the plaintiff (doctor) and defendant prior to her husband's death. Under such circumstances, the Appellate Court declares that there was no legal or equitable claim upon the defendant by the plaintiff, and that for that reason there was nothing upon which an account could be stated. Hence the reversal of judgments.

CORRESPONDENCE.

A REVIEWER CRITICISED.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In THE MEDICAL NEWS for June 26, 1897, the very pleasant review of my book is ended by a misstatement which, in justice to my publishers, I feel bound to correct. The reviewer refers to the lithographic plates as "not being comparable to the originals from which they were borrowed." As all of the plates referred to are themselves originals, the reviewer must, I think, be endowed with a curious second sight or double vision, since he is able to compare my plates and their non-existent "originals," so much to the detriment of the former.

This is not the first time that I have known such a statement to be manufactured out of whole cloth, but I hope that, in your journal, it may be the last.

Yours truly,

RICHARD C. CABOT.

BOSTON, July 8, 1897.

[The reviewer of Dr. Cabot's book regrets extremely that he has cast this undeserved reflection upon the plates in question. The idea he had in mind would have been more correctly expressed by the word "modeled" than by the word "borrowed."—EDITOR.]

OXYTUBERCULIN AS A SPECIFIC IN TUBERCULOSIS.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: Referring to the leading article in your issue of the 3d inst., "The Treatment of Pulmonary Tuberculosis," by Joseph O. Hirschfelder, M.D., I cannot consider the same of much scientific value as a new discovery, as some investigations of utmost importance have either been forgotten by the author, or else have not seemed to him of sufficient weight to be discussed in his article. Such important questions as the following have not been answered by the writer, viz.:

First. Is the entrance of air into the peritoneal cavity the cause of recovery in cases of peritoneal tuberculosis subjected to laparotomy? Cases cited by the author are so few and inconclusive that we are unable to judge as to the cause of recovery.

Second. Does tuberculin oxidize in the presence of air, or is it the nascent oxygen in this weak solution of hydrogen peroxid that causes this oxidation? Furthermore, has any oxidation whatsoever taken place?

No chemic tests have been applied to verify the author's statements that an "oxytuberculin" has been formed. Would it not have been advisable had the author determined the relative reducing or oxidizing powers of the tuberculin before and after treatment with hydrogen peroxid.

Has the "oxytuberculin" greater therapeutic powers than tuberculin itself? No comparative results are at hand; it would decidedly have enhanced the value of this article as an example of scientific research had the author performed comparative results upon guinea-pigs. These

animals, say fifty to one hundred, should have been inoculated with pure cultures of bacillus tuberculosis, and at different stages of the disease tuberculin and "oxy-tuberculin" should have been injected, and by comparing the number of recoveries in each instance, the author might possibly have verified his statements. In absence of such experiments, I cannot regard the article as the result of deep and long-continued scientific research. Oxidation, no doubt, produces a destruction of animal tissue, but this destruction in itself implies a corresponding reducing action; therefore, it might be asked, is there oxidation in the animal body, as a whole, when tissue is destroyed as in tuberculosis, and does the bacillus tuberculosis produce oxidation in its reaction upon animal tissue? Further researches would establish the truth of this hypothesis, or its falsity.

Are toxalbumens oxidized by hydrogen peroxid (one per cent.), in slightly alkalin solution, so as to cause a change in the chemic reaction of the tuberculin?

Finally, is the author justified in using the word "oxytubercutin," without having verified his hypothesis that an oxidation has taken place in the preparation?

This subject is one requiring careful scientific research, and I am skeptical regarding the author's conclusions, for I find he has hardly more than performed a chemical reaction, without balancing his equations.

S. BOOKMAN, PH.D., M.A.,

Acting Associate in Physiological Chemistry, Pathological Institute, State Commission in Lunacy.

NEW YORK, July 15, 1897.

A REPLY TO DR. WOODBRIDGE.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In the current number of THE MEDICAL NEWS is a communication from Dr. John Eliot Woodbridge, and as he mentions my name, and is inaccurate in some of the statements referring to my recent criticism of the Woodbridge method of treating typhoid fever, I beg space for correction. He refers first to my comparison of his testimonials to "cancer cures, kidney cures," etc. My only reply is to challenge any fair mind to read for himself these testimonials as published in the recent number (July 10th) of the *Journal of the American Medical Association*, Dr. Woodbridge's paper having been read by title at the recent meeting in Philadelphia. These are similar to the testimonials I saw and criticised. I have no "personal abuse for the Doctor," but he has offered *his method* to the profession, and it must stand or fall upon *its merits*.

I protest that I shall not be misrepresented as having "sanctioned" in my paper the use of phenacetin or any coal-tar derivative. Reference to that paper will prove what I said to have been, "*Such preparations as phenacetin, etc., may be used in small doses, but I deprecate most decidedly the use of any of the coal-tar derivatives at any stage of the disease as being too depressant.*" Again, "*I cannot too earnestly condemn the use of the coal-tar derivatives. Their exhibition is fraught with danger, because of their depressant effect on the heart.*"

Now, sir, as Dr. Woodbridge must have read my whole paper, why does he take a part of a sentence and make me "sanction" the use of a remedy by its quotation, when the unqualified condemnation of the whole sentence and the statement in another part of the paper proves beyond doubt that I do not approve of or use phenacetin in the treatment of typhoid fever (see my paper, *Journal of the American Medical Association*, July 3d). I am as earnestly in search of improved methods of treatment in the cure of disease as Dr. Woodbridge, but I must insist that to commend these methods there must be back of them the full appreciation of a rational pathology, not a hobby. Very respectfully yours,

J. N. UPSHUR,

210 W. GRACE ST., RICHMOND, VA., July 24, 1897.

EDUCATION AS A CURE FOR THE SOCIAL EVIL.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: There are optimists and pessimists in medicine. Noah, according to Scripture, applied the most radical antiseptic measures to the Social Evil, and yet the cat came back. Either auto-inoculation is a scientific possibility, or there is a crack in the veracity of the narrative, or the earthen vessels left after the gonococcus and syphilococcus were buried under the sediment of the flood, were contaminated.

There is much to encourage the social reformer in Noah's history. He blew his own horn for one hundred years and made seven converts. One was his own wife, who, perhaps, had reasons of State for her conversion. Here was a chance to save her husband from the perils of strange women. You see, she was acquainted with the old man.

So the new gold cure for the Social Evil is to be EDUCATION. Well! well!! It is like some people, it won't work. Everybody ought to be good; everybody ought to take muscular exercise enough to make a regular and continent life enjoyable. But they don't. Experience, which has boxed the ears of many generations of theoretic kids, shows how knowledge usually tends to increase the power of a bad egg in society. Congress might appropriate fifty millions of dollars as a perpetual endowment for a Social Evil University, and empower County Boards of Health to matriculate therein every frequenter of the brothel. A curriculum broad enough to include *poetry* would only result in stuffing the students as a Thanksgiving turkey is stuffed. No system ever devised by God or man will make thinkers out of the masses; the thinker is a rare bird. This is the core of the apple.

Let me illustrate the etiology and pathology of the Social Evil. It won't do to ignore the commercial basis of the thing. There is a combination of forces and resources to inoculate the land with the social virus for the sake of the almighty dollar. And yet one man at least sees in alcohol the germicide of criminality. Brother, lend us your head so we can butt it against the argument that ten innocent people are murdered by alcohol where one guilty wretch is crucified. If you have Solo-

mon's desire to find wisdom go to the insurance companies. They have it in stock and would not even take a gilt-edged mortgage on a brewery.

The sporting house is controlled by the proprietor for the sake of the money there is in it. He boards and furnishes rooms to his "girls" at so much per week, and then they must rustle for a livelihood. They earn a commission on every bottle of intoxicating liquor they can sell. It is one part of the business to get patrons drunk, and another part of the business is outright robbery. Most of the women engaged in this traffic have been solicited. Cat-like missionary work is done to reach those men in a community who will prove to be good spenders. Wine suppers where naked women dance are often on the program. A naked woman always is a magnet for the average man.

Prostitutes try to be clean, so far as the genitalia are concerned, and every prospective customer must submit to a physical examination. Faith is the substance of things hoped for, the evidence of things not seen, to the men, and they are liable to pay dear for their whistle. Gonorrhea is regarded by "the profession" in the light of vaccination, but syphilis is a terror, and the black sheep of either sex is summarily cast into outer darkness, where there is weeping and wailing and gnashing of teeth.

I once made a list of fifty married men in a Pennsylvania town where a house of prostitution is not tolerated, and compared it with a list of fifty married men in a Montana town. Coffee and whisky are both pernicious stimulants of the nervous system, because there were as many baldheaded and prematurely aged men in one list as in the other. The wives of the Westerners compared favorably with the wives of the Easterners. There were no more stillborn children, premature births, gynecological cases among the former than among the latter. As to fecundity, the Eastern women has a shade the advantage, not enough, however, to prove that interference with conception or the product thereof was more general in one section than in the other. Western children, compared with Eastern children, are the same darlings, mentally and physically, with, perhaps, a streak of irreverence for the Sabbath. Of course, the wives would be pleased to have Providence smite the "social settlement" in Western towns with fire and brimstone, but Providence does not do business in that way.

Our method of dealing with the Social Evil is to fine the women, which amounts to license. The men who patronize the industry ought to be enrolled at the police station and the names periodically advertised in the newspapers just as uncalled-for letters at the post-office are advertised. Law, religion, or medicine furnishes no warrant for dealing with a sinner gently because he is a man. What is sauce for the goose should be sauce for the gander. It is not morally right to deal with the Alcoholic Goliath as with a spoiled child, and then to hand his lusty daughter over to the tender mercies of the medical profession.

JAMES KIRBY FREE.

BILLINGS, MONT., July 10, 1897.

OUR VIENNA LETTER.

[From our Special Correspondent.]

PROSPECTIVE CHANGES IN THE VIENNA GENERAL HOSPITAL—INFLUENZA AS AN ENDEMIC DISEASE AND SOME OF ITS COMPLICATIONS—A SIMPLE MODIFICATION OF COW'S MILK FOR INFANT-FEEDING—CELEBRATION OF PROFESSOR JOSEPH GRUBER'S SEVENTIETH BIRTHDAY—FERIAL COURSES IN VIENNA IN SEPTEMBER.

VIENNA, July 10, 1897.

A RECENT ministerial announcement seems to assure a great change in the *Allgemeines Krankenhaus*, the special medical feature of Vienna. A large part of the old hospital, which has been a familiar landmark since Joseph II.'s time, at the end of the last century, is to be torn down. In its stead a large apartment house is to be erected at the corner of Alser Strasse and Spital Gasse. The gradual increase of traffic around and past this corner, especially since the introduction of the electric tramway, has made it very unsuitable for hospital purposes. Altogether, wards which are capable of accommodating 1000 patients are to be torn down, but wards for 1750 patients are to be furnished in their place by the erection of a series of buildings on the pavilion plan on the grounds of the National Insane Asylum on Lazareth Gasse. The change will be a welcome one, I am sure, to both doctors and patients, and it demonstrates that the government has at last come to realize that if Vienna is to retain the high place she has held in clinical medicine better clinical facilities must be at hand. The old building, while it must have been considered a model hospital in its time, is sadly deficient in most things which are considered indispensable in a modern hospital. Facilities for ventilation, disinfection, and segregation, are of the most primitive kind, and the only places available for microscopic and chemical examinations of blood, secretions, and excretions are in the wards themselves.

The result of this state of affairs was that when the last vacancies occurred in professorships in medicine and surgery men to whom the places were offered would not accept them. Neither Erb nor Maunyn cared to leave their well-appointed clinics at Strasburg and Heidelberg to take the old-fashioned wards in Vienna, despite the magnificent material the clinics afforded and the prestige of the Vienna school. Czerny was of the same mind with regard to the surgical clinic so that the Minister of Public Instruction had to seek farther for candidates for the vacant chairs. With the new order of things this is not so likely to happen unless the short-sighted pecuniary policy of the Austrian government should stand in the way.

That influenza has again become endemic in most of the countries of Europe seems clear. Cases in which Pfeiffer's bacillus can be demonstrated in the sputum are nearly always under treatment in the various hospitals of Vienna. Irregular, severe bronchitides, with a tendency to bronchopneumonia, lobar pneumonia running a peculiar course, and complicated with symptoms of great depression, heart disturbance, and the involvement of other mucous membranes besides the respiratory tract are almost invariably suspected as of grippal origin, and the

bacillus can nearly always be demonstrated without trouble. The well known tendency to mixed infection, so readily explicable now that it is known that Pfeiffer's bacillus is preferably symbiotic even in ordinary culture media, and grows more luxuriously where other micro-organisms are present, is looked upon clinically as almost pathognomonic. Occasionally cases are reported from the hospitals where, among weakened patients, the disease seems to be communicated to one or more in a ward, so that in its occasional occurrence in an endemic form it has not lost entirely the contagious character of its epidemicity.

The *post-mortem*-room makes some interesting revelations as to the fatal character of the complications and sequelæ of the disease. Many of the fatal cases occur as the result of the infection during the winter epidemic here and they form a very striking commentary on the serious nature of the disease, to which, when it first became epidemic, it was the custom to refer so jokingly. Putrid bronchitis, gangrene, and abscess of the lungs, the origin of the process being an influenzal pneumonia months before, without tendency to complete resolution, are not by any means a rare find on the autopsy-table. Still more striking are the nervous and vascular affections of which the most probable etiology seems to have been the toxins of the influenza bacillus. Myelitis, polyneuritis, in the form of an ascending paralysis (what would be called "Landry's paralysis," I suppose, if the cause were not known), and muscular atrophy have been noted. Pathologic changes are found in the intima of arteries, a toxic influenzal endarteritis which seems to account for bleedings from the mucous membranes of the nose, mouth, uterus, etc., and hemorrhages in the skin. The formation of marantic thrombi from toxic disturbance of the nervous heart mechanism, with lung emboli and sudden death also is common, some of the cases looking very like the sudden deaths which, without autopsy, go to swell our health-board reports of heart failure. The more one sees of it the more one realizes how little is really known of the disease and its varied possibilities.

One of the large dairy companies which supplies Vienna with milk furnishes families at a very reasonable rate with a modification of cow's milk which represents mother's milk very closely in its composition, and gives excellent results in infant-feeding. The formula employed is a modification of the method of preparing cow's milk suggested by Vigier some three years ago, which is now used, with slight modifications, in a good many places in Europe. A half liter of milk is treated with lab-ferment and then filtered through silk. The resulting liquid, which contains about one per cent. of albumin in solution, one per cent. of fat, and $5\frac{1}{2}$ per cent. of sugar, is added to a half liter of good rich, full milk. The whole is then pasteurized and distributed in sealed glass flasks.

The method of preparation is an easy and very adaptable one, and the absence of chemic manipulation commends it. It may easily be modified to suit varying conditions in the child, or to meet the necessity for more nutritious food as the child grows older; in fact, the company supplies two or three modifications according to the

wants of its patrons. The results reported from the use of this "Sangling's milch" are very encouraging. Especially does it commend itself in the cases of weak, delicate children. At the Polyclinic, in the hospital itself, and in the Out-patient department, it has given better results than anything so far tried.

Many American physicians who have studied in Vienna will be interested in the announcement that the seventieth birthday anniversary of Professor Joseph Gruber, the distinguished otologist, occurs this year, and that his many friends and pupils have resolved to celebrate it fittingly. An international committee is being organized, and the details of the celebration are being arranged. The birthday occurs in August, but as this is vacation time the celebration is to take place in October. A bronze medal bearing an image of Professor Gruber is to be struck in honor of the occasion, and is to be a souvenir for those who take part in it.

The programme of the Ferial courses for August and September is just out. They are no longer an experiment but are evidently meant to rival the corresponding courses given at Berlin which have deservedly been so popular. The courses announced for September are especially good, notably in pathology and some of the specialties. Visitors on the way home from the Congress at Moscow will thus have an opportunity to study the methods of the Vienna school.

SOCIETY PROCEEDINGS.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY.

Third Annual Meeting, Held at Washington, D. C., May 1, 2, and 3, 1897.

The President, FRANK HYATT, M.D., of Washington, D. C., in the Chair.

THE proceedings were opened by an address from the President. He touched upon some of the more noteworthy achievements during the past year in the branches of medicine coming within the scope of the Society. In the recent congress, he said, seventy-five per cent. of the papers had been devoted to rhinology. An especially interesting contribution was one on ozena, in which it was claimed that a large percentage of the cases of this disease could be cured by the application of the electric current—twenty milliampères for twenty minutes at a time. In the Vienna Congress the prevailing sentiment was opposed to the radical surgical procedures which had been advised in Germany, especially in the treatment of antrum disease. It was also agreed that too much stress had been laid upon the teeth as a cause of such disease. The accessory cavities were discussed also, before the British Society of Laryngology, Otology, and Rhinology. Here it was stated emphatically that operations in frontal empyema should not be considered successful unless drainage was provided through the nose. The ethmoid cells had been discussed in three scientific papers. Mackenzie had brought forward proof of the incorrectness of the statement that suppurative inflammation of the ethmoid has a tendency toward producing necrosis. He

also said that there was no special tendency in these cavities to myxomatous degeneration. A number of authors had called attention to the lingual tonsil during the past year, and had spoken of the significance of its pathologic lesions. Lennox Browne, in 1547 cases of nose and throat disease, had found the lingual tonsil varicose in 438, and in thirty-seven per cent. of these there was also hypertrophy of the gland. MacIntyre had made a report bearing upon the value of the X-rays in investigating diseased conditions of the nose and throat.

There had also been commendable activity in the practice of otology during the past year. The importance of asepsis in connection with the ear had been strongly urged, and cerebellar abscess had been made the subject of many important contributions. In mastoid operations, it had been found that the best results followed frequent dressings.

CHRONIC NON-SUPPURATIVE OTITIS MEDIA

was the title of a paper which was then read by DR. S. MACCUEN SMITH of Philadelphia. He said that the nasopharynx necessarily must be considered in this connection because of its important etiologic relations to the subject under consideration. For clinical purposes it is sufficient to regard the several varieties as different stages of one disorder, beginning with a simple catarrh and ending with advanced trophic changes involving the internal ear, and attended by deafness and tinnitus. The author did not believe that the general health of the patient had any material influence on the development of the disease except in the case of syphilis. The true underlying condition is a catarrh of the nasopharynx. There will be found more or less obstruction of the Eustachian tube, marked retraction of the membrana tympani, with thickening, displacement of the ossicles, and the whole bound down by firm adhesions to the promontory. If, in addition, there is impaction or bony union of the stapes to the foramen ovale, it is not at all wonderful that efforts toward relief meet with comparatively little success. Not only must the catarrhal condition of the nose and throat be controlled, but the free nasal respiration must be established. It seems foolish to hope for relief in cases of ankylosis and adhesions without first securing liberation of the membrana tympani and ossicles.

The treatment should consist of an incision into the membrana tympani along the entire length of the handle of the malleus. Through this a small knife should be introduced, and the adhesions divided. With a small hook, efforts should be made to break up the adhesions. A few drops of sterilized albolene should then be instilled into the tympanic cavity. The canal should be filled with iodoform gauze, care being taken that it does not impinge on the membrana tympani. The gauze should be removed on the third or fourth day. Massage of the ossicles at intervals of three or four days is next in order. In the experience of the writer, additional injections of oil can be made into the drum-head. From ten to twenty hypodermic injections of the hydrochlorate of pilocarpin, at intervals of two or three days, may be given with advantage. Phosphorus and strychnin should be administered

internally. Of course, the nasopharynx should have received proper attention before this line of treatment is begun.

DR. CHARLES W. RICHARDSON of Washington, D. C., reported a case of

LARYNGECTOMY FOR MALIGNANT DISEASE OF THE LARYNX.

During April, 1896, he had been asked by Dr. Butler to see a well-nourished man who had a red growth, about one centimeter in diameter, which sprung from the left wall of the larynx just above the cord. There was a good family history and no evidence of syphilitic taint. Examination of the growth, after removal, showed it to be an epithelioma. At the time of the operation last December the patient's general condition was bad, and cancerous cachexia was marked. He suffered from paroxysms of severe dyspnea, and could sleep and eat but little. There was no pain in the laryngeal region, or any pain of a reflected character at any time. There was no infiltration or involvement of neighboring glands. Both cords had been destroyed, and their places were occupied by nodular new growths of a whitish appearance.

On December 12, 1896, a preliminary, low tracheotomy was performed. On December 19th, laryngectomy was performed, the operator using Gerster's tampon canula. During the operation some trouble was experienced from profuse hemorrhage, owing to the accidental division of a deep vein. The upper end of the esophagus was stitched subcutaneously to the upper end of the transverse wound so as to completely shut off the pharyngeal cavity. The epiglottis was left *in situ*. During the first day after the operation the patient seemed much more comfortable, and his temperature was 99° F. On the evening of the second day, he suddenly became much worse and died shortly afterward from acute edema of the lungs.

Examination of the larynx after the operation showed that the extent of the growth was far greater than had been supposed, as it filled the whole interior of the larynx and even extended into the trachea. It seemed to the speaker that it is more properly surgical to unite the flaps and close the wound than to follow the usual plan of using gauze packing.

PAPILLOMA OF THE LARYNX RECURRING AS AN EPITHELIOMA.

DR. M. R. WARD of Pittsburg, Pa., read a paper with this title. He reported the case of a girl, seventeen years of age, with a family history which was negative as regards carcinoma. During 1893 she had had an attack of epidemic influenza, and soon after had noticed that she was hoarse and could not speak above a whisper. On consulting a physician, she was told that there was a growth on the vocal cord. During July of the same year the growth was removed by Dr. Day of Pittsburg. He considered the growth to be a papilloma, and the examination of the pathologist confirmed the diagnosis. The patient gradually grew worse until November, 1895, at which time Dr. Ward first saw her. The arytenoids were freely movable, and the anterior half of the left vocal cord was almost completely destroyed by ulceration. The

ulcer was ragged and irregular, and surrounding it was an infiltration of the submucous tissue. The right vocal cord was congested and swollen, and the chink of the glottis was much narrowed.

Tuberculosis was excluded by physical and microscopic examination. The girl was given mercurial inunctions and increasing doses of iodid of potash, and at the same time a spray of absolute alcohol was applied to the larynx in the hope that the growth might prove to be papillomatous. She steadily became worse in spite of the spraying, so one month later a tracheotomy became necessary. At this time the anterior two-thirds of the left vocal cord was totally destroyed, and there were numerous irregular nodular masses of bright red, diseased tissue on the left side. There was no enlargement of the cervical glands. On March 14, 1896, laryngotomy was performed. Numerous masses were found beneath the vocal cords, and were removed. The laryngeal cartilages were apparently healthy. During the first twenty-four hours the wound was left open and was packed with iodoform gauze.

The specimen removed from the larynx was examined by Dr. Wasden, and found to be a mixed epithelial growth—an adeno-epithelioma. The disease soon showed evidence of recurrence, and a laryngectomy was then performed. At this time there was no recognizable lymphatic involvement. The entire larynx, epiglottis, and a portion of the anterior wall of the esophagus were removed. The patient was nourished through an esophageal tube. The wound healed readily and convalescence was uncomplicated. About August 8th, a recurrence was noted, and on October 25th the patient died of exhaustion, almost three years after the disease was first recognized.

The case is of interest, not only on account of the unusual situation of the growth, and the comparative youth of the patient, but because the evidence that the growth was originally benign was exceptionally strong. Dr. Delavan recently had stated that the etiology of laryngeal cancer is as little understood as that of cancer occurring in other parts of the body. The solution of the question can only be made by an appeal to statistics. The investigation of this subject undertaken by Semon still maintains its position as being decidedly the most valuable contribution to our knowledge. These statistics are as follows: Number of benign tumors observed, 10,747; number of papillomata, 4190; number of intralaryngeal operations on benign tumors, 8216; number of intralaryngeal operations on papillomata, 3382; number of repeated removal, 480; number of spontaneous degeneration, 12; number of degeneration after intralaryngeal operation, 31. The speaker said that the most formidable stumbling-block lies in the difficulty in making a positive diagnosis between papilloma and a carcinoma in the early stages. Clinically, this is often impossible, and even the microscope has not always yielded trustworthy results.

DR. JAMES KERR of Washington, D. C., reported a case of

He had been asked by Dr. Hyatt to see the patient with reference to the advisability of performing tracheotomy. This was performed about one month before the laryngectomy. The points which decided them in favor of the operation in the case were: (1) The stronger probability of the growth being a carcinoma; (2) the growth was distinctly confined to one side of the larynx; (3) there was no involvement of the lymphatic glands, or of the tissues outside of the larynx. The patient was a woman, fifty-four years of age, who had long been in poor health, and whose kidneys were inactive. The daily quantity of urea did not rise above 180 grains, and was often much less. In addition to this, the heart action and digestion were poor, and she was quite neurotic. It was hoped that a partial laryngectomy would be sufficient—a much less dangerous operation than complete laryngectomy.

The operation itself presented no special difficulties. The cricoid cartilage was split behind, and the larynx was then separated from the esophagus and the cricothyroid membrane divided. On opening the larynx it was found that the growth completely blocked the larynx, but it was quite adherent on the right side. Throughout the operation there was practically no hemorrhage. The patient's strength had been fortified prior to the operation by the administration of strychnin and atropin, and she had been given saline enemata. At the time of the operation the head was placed lower than the body. This also had the advantage of guarding against lung infection by keeping the blood out of the trachea. At the close of the operation the patient's general condition was exceedingly satisfactory. Instead of using the balloon tampon-cannula of Trendelenburg, a piece of compressed sponge was substituted, and as soon as it became moistened with the secretions it swelled and tightly closed the opening. This device acted admirably. Rectal enemata were employed during the first three days, and then she was able to eat small pieces of meat. The patient did very well at first, and although there was no evidence of septic pneumonia or other complication directly connected with the operation, her strength gradually failed and she succumbed at the end of the first week. Dr. Reed of the Army Medical Museum at first looked upon the case as one of epithelioma, but further examination led him to believe that it was a medullary carcinoma originating in some of the glands of the mucous membrane of the larynx.

TRACHEAL INJECTIONS IN THE TREATMENT OF LARYNGEAL AND PULMONARY INFLAMMATIONS.

DR. JOHN A. THOMPSON of Cincinnati, Ohio, read a paper with this title. He said that by intratracheal injections one obtains the direct action of the remedy on the diseased area. There are many proofs that tracheal injections are speedily absorbed. The cure of a bronchitis by such direct medication, without interfering with digestion or appetite, is a distinct advance in therapeutics. In tuberculosis there is a mixed infection—a secondary infection with the germs of suppuration. A little menthol injected into the trachea will give greater and more prolonged relief than a large dose of morphin given by the

mouth. The remedies should be soluble in the vehicle employed, the solutions should not be very irritating, and the drugs so used should be capable of volatilizing slowly at the temperature of the body.

The speaker said that he had first become convinced of the great value of this method of treatment by observing its excellent results in pulmonary tuberculosis and chronic bronchitis. When the remedies are not irritating, it is not necessary to use cocain previously. He uses from one to four drams of a solution at a sitting, and ordinarily there is little coughing or strangling.

DR. J. E. NICHOLS of New York presented and demonstrated the action of a new electric-lighted aural speculum. It consists of a double speculum, the upper part of which contains an electric lamp, and the lower part the illuminating apparatus. A diaphragm extends half-way through the lumen of the speculum. The back of the lamp is covered by a polished mirror. The reflection from the electric light is thrown directly from the end of the speculum, and is focused upon the membrana tympani. The instrument can be adjusted to the head of the patient without difficulty. This allows the operator to use both hands.

DR. SCHREPPEGRELL of New Orleans, La., exhibited a new mechanical saw and masseur. In this instrument the handle, instead of being at right angles with the direction of the saw, is placed at an obtuse angle, thus giving it the shape which has been found the most convenient in ordinary nasal saws, and which prevents the hand which holds it from coming too near the face of the patient. In order to permit this position, the backward and forward movement of the saw is obtained by means of a ball revolving in an eccentric. The saw is operated by the ordinary motor or dental engine.

VIBRATION FIGURES PRODUCED BY THE HUMAN VOICE.

DR. H. HOLBROOK CURTIS of New York said that Messrs. Watts and Hughes of London in 1885 first made experiments having for their object the demonstration of the vibrations of the human voice on stretched membranes. Fanciful figures were made in this way, not only with powders, but with pigments. These pigments will shoot out and interlace and produce the most beautiful flower-like forms with variations of color. By using a square instead of a circular bowl for the membrane, the serpent forms were produced.

He presented pictures illustrating what he had accomplished in this direction. He has discovered that under certain conditions of tension and a certain specific gravity of a salt and emery mixture each note of the singing voice produces a certain definite geometric figure. Slight variations in *timbre* and overtones will produce slight variations in the figures without altering their form. In explaining the apparatus, he said that it took weeks to get the india-rubber diaphragm in a condition to respond delicately to the notes produced. Equal tension can be secured only by marking a small circle on the rubber, and then by stretching the rubber in accordance with this outline. After having done this, the rubber each day, or oftener, should be excited to vibration by gently tapping

or rubbing it to render it homogeneous. The pictures were as exact representations of pitch as are the responding notes of different tuning-forks or resonators. By means of a series of photographs of these figures, the speaker pointed out the relationship between the various tones and the construction of a chromatic scale in geometric tone-figures of great intricacy and beauty.

LABYRINTHIN PHENOMENA DEPENDENT UPON MIDDLE EAR DISEASE, AND THEIR RELIEF BY LOCAL TREATMENT

was the title of a paper by DR. EDWARD B. DENCH of New York. He said that in this class of cases physical examination will reveal a considerable retraction of the drum membrane, and sometimes slight congestion of the manubrial and peripheral plexuses. The caliber of the Eustachian tube is slightly reduced, the air entering the tympanum on catheterization but producing a rough sound indicative of thick mucus adherent to the walls of the canal. Quite frequently inflation causes a moderate amount of vertigo. There often is slight temporary improvement after the inflation, lasting a few hours. The rarefaction of the air in the middle ear, caused by the narrowing of the Eustachian tube walls, produces a condition similar to that seen in cases of labyrinthin concussion. The ossicular chain is displaced inward, with considerable force, and the stapedius and tensor tympani muscles are unable to protect the labyrinth from the sudden increase in tension, the result naturally is concussion. This condition is most frequently found in neurotic persons. The fact that the functional examination shows no interference with sound conduction does not affect the value of this examination; it points out a hyperesthetic condition of the perceptive apparatus. Treatment should be instituted early. These cases will often prove misleading unless the appearance of the drum membrane, the condition of the Eustachian tube, the history of the case, and the result of the functional examination are all considered.

DR. SARGENT F. SNOW of Syracuse, N. Y., then read a paper, entitled

HEADACHES FROM NASAL CAUSES.

This has been published in a recent number of THE MEDICAL NEWS.

THE CURE OF SINGER'S NODULES.

DR. HOLBROOK CURTIS of New York read a paper with this title. He said that a singer's nodule is an inflammatory growth situated at the junction of the anterior and middle-third of the vocal cords. These nodules are due to an improper method of attacking tones, or to using a focus of tone in such a way that attrition becomes possible. The damage occurs chiefly in singing the upper medium register. That they are not true nodes, in an acoustic sense, but the result of attrition, has been demonstrated by investigations with the stroboscope. In examining these cases, the patient should be directed to talk, and not to sing, repeating the sound of A. While holding the tongue with a tongue depressor, the patient is next directed to change to E. This shows the cords in their anterior position without strain or undue tension.

One of the first symptoms of singer's nodules is that the singer's voice becomes hoarse after singing. They do not necessarily result from overwork or from a cold. In opera singers he had frequently noticed nodules appear in a single night as the result of a change from one language to another. In the acute cases, the necessary exercises for relief should be begun immediately. By a proper use of gymnastic exercises of the intrinsic muscles of the larynx the singer is put at once into a condition for singing. The object of the treatment is to make the cords adopt a new method of vibration. That the cords by an alteration in the overtones really adopt a new segmentation, and that this prevents further attrition has been demonstrated by the repeated cure of nodules by no other means than a change of method in singing. A number of cases were cited and illustrated by means of pictures of the cords at various stages of treatment.

Simple exercises in singing which he had devised represent fifteen years of study of tone production. The accessory cavities of the face are the normal resonators of the human voice. It is very important that patients should not be allowed to talk during the treatment for they talk in the medium register, and hence aggravate the trouble. Respiration is an important factor. The patient should be made to maintain a raised chest during the exercises, not by a respiratory, but purely by a muscular effort. By cultivating these exercises the breathing will become purely diaphragmatic, the size of the chest at the lungapices will be increased, and the *timbre* of the voice improved.

SARCOMA OF THE LARYNX—SARCOMA OF THE NASOPHARYNX IN AN INFANT.

DR. T. H. HALSTED of Syracuse, N. Y., reported these cases. He said that the disease is now a rare one, yet he felt sure that owing to the fact that unsuccessful operative cases are not often reported, the condition is not as rare as statistics would seem to indicate. His two cases—the only ones of the kind he has seen—had come under observation during the past year.

CASE I.—J. H., male, fifty-seven years of age, came to him on June 11, 1896. There was difficulty experienced in swallowing just as the food reached a point opposite the larynx. A constant, ropy secretion was expelled by coughing, and there was an excessive secretion of saliva. The laryngoscope showed the presence of a rounded, grayish, non-ulcerating sessile tumor, about the size of a walnut. On June 17th, the tumor was removed in four pieces by the cold snare. It was examined and reported to be a large, round-celled sarcoma. The patient did not return until July 17th, and then it was found that the growth had recurred, and was larger than at the time of the operation. Partial laryngectomy was offered as the only chance, but the patient did not appear again for six months. At that time he had severe paroxysms of dyspnea, particularly at night, and leaning forward at any time excited great difficulty in breathing. He had lost flesh. The tumor filled the larynx, and the vocal cords could not be seen.

On January 29, a tracheotomy was performed because of an exceedingly bad attack of dyspnea. A week later, the growth appeared at the opening in the trachea. After

another week it had reached to the base of the tongue. During these two weeks he was more comfortable than before the tracheotomy, but his general condition did not improve. He died on April 27th. During six weeks prior to death a large part of the fluid food taken was regurgitated. The cough was a constant and distressing symptom but codein was very effective in controlling it. There was slight hemorrhage at times, and on one or two occasions it became very profuse.

CASE II.—A child of two years in whom the respirations were labored, noisy, and rapid, had marked cyanosis. She was dull and only partially conscious. The right side of the nose was occluded by a yellowish-white growth and the soft palate was pushed forward by another mass. The attending physician had first seen the child twenty-three days before. The symptoms had developed at a time when the child was in the neighborhood of a number of children suffering from a catarrhal affection. Tracheotomy was performed, as the mother insisted upon the institution of some measure for the child's immediate relief, but it died shortly afterward. The growth proved to be a sarcoma.

THE SURGERY OF THE FAUCIAL TONSIL

was the title of a paper by DR. G. HUDSON MAKUEN of Philadelphia, Pa. He said that two conditions of the tonsil should be considered as pathologic: (1) The hypertrophied condition so common in children; and (2) the later stage of this, known as the atrophied condition. The faucial tonsil, no matter how large, does not, as a rule, interfere with the breathing except when the vault of the pharynx also is obstructed, but the enlarged tonsil acts unfavorably on the surrounding tissues, irritating the parts and causing congestion and hypersecretion. The adhesions often cause the formation of a pocket, in which the secretions collect and decompose, and, perhaps, finally burrow into the tissues, giving rise to a tonsillar or peritonsillar abscess. The atrophied tonsil is as prejudicial to health as is the hypertrophied tonsil. All measures not surgical are only slightly palliative. The indications are to reduce the size of the mass, and to favor cleanliness by removing the pockets or crypts.

The speaker uses a blunt hook for diagnostic purposes, and a cutting hook for separating the adhesions. After such operations the raw surfaces should be seared with the cautery, and the parts should then be sprayed with peroxid of hydrogen, and anointed with liquid albolene. By such precautions the patient rarely suffers from the operation. If the tonsils project beyond the pillars they should be removed, either by the tonsillotome or by means of knives. A method which he has found very useful in adults is the opening up of the crypts at repeated sittings, and so gradually removing the redundant portions of the tonsil.

PRIMARY SYPHILITIC INFECTION OF THE TONSIL.

DR. ARTHUR G. ROOT of Albany, N. Y., reported the case of a man who had had the usual diseases of childhood, and had had reasonably good health up to the time of an attack of gonorrheal rheumatism during the spring of 1894. This attack lasted for four months.

During March and April, 1896, the patient contracted a cold, which affected the tonsil. The next month the same tonsil again troubled him, and it became painful and inflamed in June. At this time he noticed a few blotches on the abdomen. When seen, two weeks later, the tonsil was the seat of a grayish ulcer, and the submaxillary and cervical glands were enlarged. The patient was given protiodid of mercury, and saturated solution of iodid of potassium internally three times a day, and his diet and habits were regulated. The throat has been kept in good condition by local applications, and at the present time, the local and general conditions are good.

In commenting upon the case the speaker said that after a careful investigation of the patient and of his mistress, he had come to the conclusion that the lesion was probably the result of kissing the girl who was syphilitic, and that the infective agent had gained entrance owing to the inflamed condition of the tonsil.

THE TREATMENT OF SUPPURATIVE DISEASES OF THE ACCESSORY SINUSES AND OF THE EAR BY OZONE GAS

was the title of a paper read by DR. W. SCHREPPEGRELL of New Orleans, La. The speaker had made a number of experiments to test the efficiency of oxygen gas, as recommended by Dr. Geo. Stoker. His results, however, had been unsatisfactory, as oxygen is an inert gas. Nascent oxygen, however, is an active oxidizing agent, and he has found it useful in these cases. He obtains this from ozone, which is an allotropic form of oxygen.

After referring to the various methods of generating ozone, he described a method which he has found the most practicable. A Siemens' ozonizer, which is connected with the terminals of a strong induction coil, is used, those employed for the production of X-rays being useful for this purpose. The air from the compressed-air apparatus is passed through this ozonizer, and a certain percentage of oxygen is changed into ozone, which is carried directly to the diseased parts by means of a rubber tube, and the proper canula for the diseased cavity. Photographs were shown illustrating this method.

The nitrogen products in this method are so infinitesimal that they may be neglected. For the patient's use at home, ozone may be prepared from a solution of diluted hydrogen dioxid acidulated with sulphuric acid to which one-grain tablets of permanganate of potash are added.

In using the ozone, the valve, which is controlled by the patient, is opened only during expiration so that the patient does not inhale the gas. No bad effects have been complained of by the patients upon whom this method has been used. The speaker reported the effects of this treatment in a case of chronic antral disease, a case of combined empyema of the frontal and maxillary sinuses, three cases of chronic otitis media, and two cases of ozena. The good effects were remarkable. The bacteriologic investigation showed the marked microbicidal effects of ozone. The method is simple and promises to be a useful one in the treatment of chronic suppurative processes and in ozena.

REPORT OF A CASE OF ABSCESS OF THE NASAL SEPTUM.

DR. L. C. CLINE of Indianapolis, Ind., reported the case of a girl aged twelve years who had been treated for a mucopurulent discharge from the nostril. Some months later she fell and struck her nose. There was considerable pain and hemorrhage, and an irregular practitioner being called in, he diagnosed typhoid fever, and proceeded to treat her for that disease. When Dr. Cline saw her there was an abscess of the nasal septum with marked displacement and injury to the bony structures. The case was one of septic fever, due to traumatism, and it emphasizes the necessity for more attention being given to these seemingly trivial injuries to the nose.

DR. C. A. THIGPEN of Montgomery, Ala., reported several cases of

OTITIC BRAIN DISEASE

following attacks of *grippe*, and DR. W. SCOTT RENNER of Buffalo, N. Y., read a paper on

CHRONIC FOLLICULAR TONSILLITIS.

DR. EWING W. DAY of Pittsburg, Pa., followed with a report of a case of

OTITIS MEDIA, WITH THROMBOSIS OF THE SINUS AND JUGULAR VEINS,

after which the Society adjourned.

REVIEWS.

DISEASES OF THE EYE AND OPHTHALMOSCOPY. A HAND-BOOK FOR PHYSICIANS AND STUDENTS. By DR. A. EUGEN FICK, University of Zürich. Authorized translation by ALBERT B. HALE, A.B., M.D., one of the Ophthalmic Surgeons to the United Hebrew Charities; Consulting Ophthalmic Surgeon to Charity Hospital, Chicago. With a glossary and 158 illustrations. Philadelphia: P. Blakiston, Son & Co., 1896.

APPEARING, as it does, so soon after Fuchs' masterly work, the Zürich professor's text-book suffers but little by comparison; in fact, many chapters, especially those on functional tests and on physiologic optics, are excellent. As much cannot be said for the sections devoted to clinical pathology and treatment, where a certain irregularity and lack of cohesion are manifested. There are a number of omissions. The subject of injuries of the optic nerve is passed over, while retinal shock (*commotio retinae*) is presented in detail. In fact, the chapters on injuries are particularly complete.

The translator's work has been, in the main, well done. His English is generally clear, concise, and a faithful rendition of the author's thought. In many places, however, it is too literal, or awkward, and the reverse of idiomatic. We cite as instances: "A whole row of tonometers have been thought out," "eyes red wept," and the inaccurate translation of "eut stillung" (disfigurement) by "displacement" (p. 154), of "Krebs auge" (eye-stone) by "crab's-eye."

The glossary (Appendix B), containing etymologies from Gould's Illustrated Medical Dictionary, Second

Edition, is full of inaccuracies, ambiguity, and pseudo-philology. Lest this criticism may seem unduly harsh, the following instructive examples are given: Acne (*αχνη*, a point), a disease of the sebaceous glands. This definition certainly misses the point entirely; chemosis (*χημωσις*, a gaping); epiphora (*ἐπι*, on; *φερειν*, to bear); gerontoxicon (*σίζ*), arcus senilis; hippus (*ἵππος*, the horse), spasmodic pupillary movements, independent of the action of light, natural in the horse. This is a startling discovery in equine physiology as well as in philology! For condensed misinformation we must, however, award the palm to kargokinesis, which is from *κάρνον*, a rent (nucleus); and *κίνησις*, change, and signifies *changes accompanying maturation of the ovum*! Almost on a par with this brilliant definition is that of *κόρη*, the pupil of the eye, so called, like the Latin pupilla, because an image appears in the eye.

The general appearance of the book reflects no little credit on the publishers. The typography is excellent and the illustrations are unusually well chosen and admirably reproduced.

ANOMALIES AND CURIOSITIES OF MEDICINE: Being an Encyclopedic Collection of Rare and Extraordinary Cases, and of the Most Striking Instances of Abnormality in All Branches of Medicine and Surgery, Derived from an Exhaustive Research of Medical Literature from its Origin to the Present Day, Abstracted, Classified, Annotated, and Indexed. By GEORGE M. GOULD, A.M., M.D., and WALTER L. PYLE, A.M., M.D. Imperial octavo, 968 pages, with 295 illustrations in the text, and 12 half-tone and colored plates. Sold only by subscription. Philadelphia: W. B. Saunders, 925 Walnut street, 1897.

Few men are possessed of that order of mind which finds congenial work in the construction of a volume like the above, and yet the man who does such work is placing the profession under obligation in that he renders one more department of information easily accessible. The work, of course, is designed solely as a book of reference, and is in itself a curiosity. He who consults this book for a brief hour is again reminded that facts are stranger than fiction. The question of credibility in regard to the remarkable statements made and cases reported is discussed by the authors in the preface, and they hasten to disavow any responsibility for the truthfulness of the chronicles given. The material is conveniently classified and arranged, and there is an elaborate table of contents and a carefully prepared general and bibliographic index.

GUY'S HOSPITAL REPORTS, Vol. LI., being Vol. XXXVII. of the third series. Edited by E. C. PERRY, M.D., and W. H. A. JACOBSON, M. A. London: J. & A. Churchill, Great Marlborough Street, 1896.

THIS volume appears in its usual form, and contains a number of valuable articles from the pens of the visiting lecturers and surgeons. The first one hundred pages are occupied with the memorial sketch of Arthur Edward Durham, by W. H. A. Jacobson. The volume also contains an admirable portrait of the subject of this sketch.

LECTURES ON THE TREATMENT OF FIBROID TUMORS OF THE UTERUS, MEDICAL, ELECTRICAL, AND SURGICAL. By FRANKLIN H. MARTIN, M.D., Professor of Gynecology in the Post-Graduate Medical School, Chicago; Surgeon to the Woman's Hospital, etc. Chicago: The W. T. Keener Co., 1897.

IN this short sketch, Dr. Martin has given a mirror of the status of the consideration of fibroid tumors of the uterus. His conclusions are, in the main, conservative. He advocates the medical and electrical treatment of these neoplasms only when a surgical operation is refused, or is impossible or inexpedient. The historic sketch accompanying each chapter adds to the value of this little work, which is modern and certainly worth reading. The various operations for uterine fibroids are particularly well discussed. The illustrations are, on the contrary, quite crude, and the proof-reading has not been well done.

ATLAS UND GRUNDRISS DER LEHRE VOM GEBURTS-AKT UND DER OPERATIVEN GEBURTSHILFE. VON DR. OSKAR SCHÄFFER. Fourth edition. Munich: J. F. Lehmann, 1897.

THAT a fourth edition of this excellent atlas of the obstetric mechanism and of operative obstetrics has been called for, is sufficient evidence of its worth. No changes have been made since the last edition, nor, indeed, are any called for. The text has been somewhat elaborated, but the splendid drawings remain as they were. Except for work on the phantom, we know of no more graphic method of teaching obstetrics theoretically than by the aid of Schäffer's atlas.

LECTURES ON RENAL AND URINARY DISEASES. By ROBERT SAUNDBY, M.D., Fellow of the Royal College of Physicians, London; Emeritus Senior President of the Royal Medical Society, etc. Second edition. Illustrated. Philadelphia: W. B. Saunders, 1897.

THE author's wide reputation as a clinician makes it not surprising that a second edition of his well-known lectures on urinary diseases should be demanded. The present edition contains many emendations and additions, and a chapter has been added on the miscellaneous diseases of the kidney, giving the work more of the character of a reference-book.

The first section deals fully with Bright's disease, considered in its anatomic, etiologic, and clinical aspects, together with its complications. The pathology of uremia and a consideration of infective, lithemic, and obstructive nephritis, with their treatment, complete the first part of the book.

The second section contains thirty-nine pages devoted to the clinical examination of the urine, and the third section is devoted to the consideration of diabetes mellitus, its complications and treatment, and to diabetes insipidus. The last section treats of renal calculus, hydronephrosis, pyonephrosis, pyelitis, hematuria, and hemoglobinuria. Each section is casuistically treated as well.

The work represents the present knowledge of renal and urinary diseases. It is admirably written and is accurately scientific. The illustrations are well executed and the book is handsomely made.

CLINICAL LESSONS ON NERVOUS DISEASES. By S. WEIR MITCHELL, M.D., LL.D., Edinburgh, Member of the National Academy of Sciences; Honorary Fellow of the Royal Medico-Chirurgical Society of London. Pp. 299, with illustrations and two colored plates. Philadelphia and New York: Lea Brothers & Co., publishers, 1897.

WHATEVER Dr. Mitchell writes is worth reading. He represents the knowledge of the special department of medical science that is associated with his name. Neurology is the richer in facts and principles because he lives and works. This little book is made up of a number of clinical lectures delivered by Dr. Mitchell at various times. It is replete with facts and represents to the medical profession some of the results of the author's vast knowledge and experience.

The clinical cases illustrative of the subject of each lecture are well selected and graphically presented. We should like to see the entire field of neurology covered by the author in the same manner.

TWENTIETH CENTURY PRACTICE. AN ENCYCLOPEDIA OF MODERN MEDICAL SCIENCE BY LEADING AUTHORITIES OF EUROPE AND AMERICA. Edited by THOMAS L. STEDMAN, M.D. In twenty volumes. Volume X. *Diseases of the Nervous System*. New York: William Wood & Co., 1897.

The publishers announce that as the manuscript for Volume IX. is not entirely finished Volume X. has been published in its place.

The first article—on diseases of the brain—comes from the pen of Dr. Joseph Collins. There is a short but complete account of the morphology and anatomy of the brain with a section on cerebral localization. Principally from the clinicopathologic work done, Collins declares that it is fairly certain that the visual center is located in the mesial side of the occipital lobe. After the section on the several varieties of encephalitis the author gives us a good account of the infantile cerebral palsies. The article on hemorrhagic apoplexy is an excellent résumé of the whole subject.

Dr. B. Sachs writes on tumors of the brain, and concludes that, in spite of the few successes in the operative treatment of cerebral tumors, the successful surgical treatment of these within the next decade depends upon improvements in the diagnostic methods of the neurologist and the operative technic of the surgeon. We believe that this is perhaps too rosy a view of the situation, since, according to Hale White and M. Allen Starr, only two to six per cent. of all cerebral tumors justify a surgical operation, and, according to several German investigators, the indications for operation on cerebral tumors are very limited.

Dr. Collins writes on meningitis. In the tuberculous variety, lumbar puncture, as recommended by Quincke, will often ameliorate the severity of the pressure symptoms. This is followed by an exhaustive and scholarly article on hysteria, epilepsy, and the spasmodic neuroses, by Dr. Charles Féré of Paris. Dr. Féré is very emphatic in his assertion that epileptics should be collected in hospitals and never in asylums, and that the education of epi-

leptic children is of great importance and presents great difficulties. We are glad to see that Dr. Féré finds very little justification in the operative treatment of epilepsy, even after all other therapeutic measures have failed. "It must be considered that the cures obtained . . . are doubtful, and it is reasonable to suppose that the improvement observed was not due to the trephining. In fact, it is well known that every violent intervention, whether medical or surgical, may temporarily modify the course of epilepsy."

In the section on neurasthenia, by Dr. Charles L. Dana, we read of a special type of neurasthenia, the "anxiety neurosis," which is surely very closely related to melancholia, if it is not, in fact, an early stage of this mental disorder. Dr. H. T. Pershing, in his article on disorders of speech, gives us a good but somewhat involved account of the physiology of speech and the acquisition of language by the child. Dr. Sanger Brown writes on the disorders of sleep and gives us a good résumé of the subject.

As a whole, volume ten of the "Twentieth Century Practice" keeps up the standard of the previous volumes, and with volume eleven, when that shall have been published, will give us a very complete reference-book for the diseases of the nervous system.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-Books, of the Leading American and Foreign Authors and Investigators. Collected and arranged, with critical editorial comments, by twenty-seven contributors. Under the editorial charge of GEORGE M. GOULD, M.D. Profusely illustrated. Pp. 1257. Philadelphia: W. B. Saunders, 1897.

It is impossible to critically review a book of this nature, whose object is to faithfully record the advances made in medicine and surgery. When one considers the enormous amount of literature from which the abstracts have been made, it will be seen that it is no easy task to give sufficient space to worthy investigators and to eliminate the results of inexperienced observers. But the editor has shown wisdom in the selection of his collaborators, and the results as shown in this second volume of the "Year-book" are highly satisfactory. As a rule the summary is not a mere outline, but is a careful review of the work, without any superfluous details. In most instances each article is followed by editorial comments, usually critical in nature, which are by no means the least important features of the book.

In a work of this kind it is almost impossible to avoid repetitions, and a few instances have been noted. We believe, however, this to be one of the best of the various year-books with which we are acquainted, and we take pleasure in commending it to every practitioner who wishes to review all the advances made in medicine without the necessity of reading the avalanche of contributions to medical literature.

The book is excellently made up, and is supplied with many well-executed illustrations.

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ORIGINAL ARTICLES.

DISEASES AND TREATMENT OF NASAL ACCESSORY SINUSES, WITH AN ANALYTICAL REPORT.¹

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PROFESSOR OF OTOTOLOGY AND ADJUNCT PROFESSOR OF RHINOLOGY
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THE etiology of diseases of the nasal accessory sinuses, and their relative frequency, have been receiving considerable attention from thoughtful observers. I have opened six frontal sinuses externally which contained polypoids and pus, and the mucous membrane was found to be undergoing polypoid degeneration. In one case the sinus was opened externally through the anterior wall of the ethmoid cells and the floor of the sinus. This case was due to an extending necrosis from the anterior ethmoidal cells. The membranes were swollen and granular, but there were no polypi.

Two cases of fronto-ethmoidal necrosis were opened through the nose by removing the anterior end of the middle turbinated body, the internal or median wall of the infundibulum and a part of the floor of the frontal sinus. The causes of the necrosis could only be inferred. In polypoid cases I have entered the frontal sinus through the nose many times. The chronic cases which have come under my observation, if considered in an etiologic sense, were about eight to ten in favor of polypoid degeneration.

In ethmoid disease (if we exclude the polypi cases which were not producing suppuration in the cells or bones), about two-thirds of the cases were caused by the polypoid process; the others were due to atrophic rhinitis, and its forerunner, suppurative rhinitis, to non-syphilitic necrosis, supposed to be due to retention of infective secretion, to syphilis, and to new growths. The sphenoidal cases bear about the same ratio. I have three cases of sphenoidal empyema under observation at the present time, all of which have been opened through the anterior upper walls, and they can be probed, curetted, and inspected through these apertures. Two were of polypoid and one of syphilitic origin.

¹ The author's first paper on this subject was read before the Section of Laryngology and Rhinology of the New York Academy of Medicine, January, 1893, and was published in the *New York Polyclinic* for February and March, 1895. A second paper was read before the same Section, January, 1895, and published in *THE MEDICAL NEWS*, March 28, 1896.

From an etiologic standpoint, morbid conditions of the antrum of Highmore are exceedingly interesting. After carefully considering the evidence presented in my series of cases, I have been led to the conclusion that the nose and the teeth are about equal as causal factors of the grave forms of antral disease. In several of my most serious cases of the latter, which were of dental origin, I was principally led to that conclusion by circumstantial evidence, as the teeth had given the patients no trouble for many years, and nothing abnormal was noticed by the dentists who had them in charge. In certain ones I believed that a tooth was the offending cause, chiefly because the odor and character of the dislodged antral secretion indicated necrotic bone, the absence of any information in the general history pointing to any other origin, and the existence of a suspicious tooth, especially when it contained a large filling and had a devitalized color. In some of the cases the fillings were removed and a collection of offensive pus and gas was found at the ends of the roots, which communicated with the antrum; subsequent extraction of the tooth and penetration of the antrum through the alveolus confirmed the diagnosis and cured or relieved the patient.

I will not undertake, in this paper, to explain the causes of polypoid degeneration. I have watched it in all stages and ages, on the ethmoid bone, and on the walls of the respective sinuses. I have seen the flat varieties disappear under favorable conditions, the tissue returning to a normal state without surgical interference. The pedunculated forms have always required some mechanical or chemical remedy. The watery infiltration seems to affect only certain persons who have a peculiar predisposition.

The diagnostic points have been rather fully considered in my previous papers. I desire to emphasize the point that the silver irrigation tube and the small trocar and cannula are invaluable aids in cases of doubtful and difficult diagnosis. The tube should be passed through the natural opening when possible. The trocar and cannula can be passed through the internal wall of the antrum just below and posterior to the hiatus semilunaris, directing the point downward and outward through the wall of the inferior meatus, and through the canine fossa.

The general pathology of each of these cases should be carefully thought out before the operation is undertaken, although not so much depends upon

the pathology as upon the extent of the process. Polypi do not signify much, but the degree of degeneration means a great deal. A small carious or necrotic area at the end of the tooth-root is usually cured easily after the extraction of the tooth. Burrowing periostitis, extending over the floor and a part of the walls, will frequently get well after drainage has been established and irrigation properly carried out. It is in this class of cases that great injury is done by what is termed "thorough curetting." The membrane is separated from the bone by pus cavities after the manner of fistulas. If the membrane is not removed, it will, under proper treatment, frequently regain a rather normal appearance, the apparent granulations and infiltrations disappearing, and will reunite to the supposedly carious bone beneath.

In those cases where the symptoms and history indicate that the bone disease has existed for many years, I have usually found necrosis varying in area and depth. The dead bone must either be curetted away, or we must wait for Nature, under favorable conditions, to throw it off. The necrosis which penetrates the cancellated parts of the superior maxilla and involves the septa between the tooth-roots, is most tedious in progress and difficult to cure. Retained fermenting secretions create a pathologic condition of their own, which is chiefly a state of hyperemia, infiltration, and irritation, with a proneness to excessive and abnormal secretions. These cases may be associated with a definite pathologic lesion, or may be kept up by the leaven from old-time degenerating matter; surgical interference will relieve the former while irrigation will frequently cure the latter.

Since our treatment must be governed by the pathologic state within the cells, and since in some cases it is impossible to determine the exact tissue changes, we must divide the treatment into expectant, exploratory, and positive methods. In all acute and subacute cases it is our duty to use the expectant or the exploratory method. In the chronic cases, where there has been not only decided destruction of the tissues, but new formations in the way of tough granulations, polypi, devitalized and necrotic bone, surgical interference is imperative. There are many cases where the evidence points conclusively to necrotic changes within the hidden area.

The expectant treatment consists of restoring the nasal chambers to their normal condition, either by surgery or by chemicals, the use of soothing and disinfecting sprays or applications, the gentle introduction of tubes and irrigation of the sinuses through the natural openings, together with attention to the general health of the patient.

Exploration in antral disease is carried out by simple penetration and irrigation of the cavities through the canine fossa, the walls of the middle and inferior meati, and by Zeims' method. "When the set of teeth is complete the opening is made on the inner side, either between the first and second molars, or between the first molar and second bicuspids." In disease of the frontal sinus and sphenoidal cells, exploratory procedures, which consist of enlarging the natural openings by forcible dilatation or by moderate curetting, frequently afford relief, and in some cases effect a cure.

When we come to a consideration of the cases of sinus disease which demand radical surgical relief, many problems confront us—problems which the recorded experience of the best authors does not seem to solve. In going over the literature upon the subject I have failed to find a description of the pathology of each individual case, a factor which we must appreciate before we can institute and carry out our treatment in an intelligent and logical manner. One author will report a series of cases cured by a certain method, and yet, when one attempts it in a half-dozen instances, it often fails. There are hundreds of cases of sinusitis in which the sinus contains muco-pus without a solution of continuity of the mucous membrane. Nearly all of these cases are cured by tapping, and many of them will recover without any interference, as the disease is more or less intermittent in its course. On the other hand, cases which have existed for many months, and which are accompanied by a rather constant mucopurulent and purulent discharge, with other evidences pointing to necrotic conditions of varying degrees, demand adequate surgical interference.

I have operated upon patients by nearly every method that has been advocated, and the milder types have done well in every instance. There are other cases of the extreme types in which I have successfully used several of the methods which seemed to me to be the most plausible. For instance, in some of the frontal polypi cases I have succeeded in arresting the discharge and relieving the symptoms by the intranasal method. There are several others in which I tried this method for a long time and failed. The cause of the failure was clearly evident when I finally opened the sinus externally. In some of these cases it was remarkable that death had not ensued in consequence of the necrotic and carious condition of the posterior wall of the sinus. In Case III. of my series I pleaded with the patient to permit me to open his left frontal sinus, but he absolutely refused the external operation, and did very well for about one year. After several months ab-

sence from my office he reported and informed me that the sinus had been giving him some pain with very unpleasant symptoms in that region, and that he would consent to the operation. He stated that he would have to go home and arrange some business matters, and would return prepared to undergo the operation at the end of two weeks. Several days later I received a letter from his wife saying that he had suddenly been taken very ill with head symptoms and loss of intelligence, and had died within a few days. There is every reason to believe that this patient would have been cured had he submitted to the external operation. In his case, although the antrum had been opened through the tooth socket, it had to be reopened on account of the natural closure of the cavity. The polypi continued to recur and trouble him; many of them were never curetted away on account of the inability to use the instrument properly through the opening, the walls of which were equal in depth to the perpendicular diameter of the alveolus. I have adopted the rule of operating externally in those cases of frontal sinus disease in which the symptoms are profound, and fail to yield to intranasal methods of treatment.

Luc of France reports most excellent results from the removal of the floor of the frontal sinus, and immediate closure of the wound after the operation. I have removed part of the floor in some of my cases, and used nasal drainage tubes; large granulations sprang up from the parts which were cut, and gave me more trouble than when the mucous membrane was left on the bone. I presume I did not remove enough of the nasal process of the superior maxilla, which forms the thick part of the floor. I shall try the method of removing nearly all of this part of the floor in a future case; we must remember, however, that the space between the thin, bony wall next to the brain, and the floor of the sinus, may be twice as great in one case as it is in another.

As the infundibulum walls are also the walls of two or three anterior ethmoidal cells, of course, when the canal is enlarged, it is done at the expense of the cell walls, and it is preferable that this should be done with some smooth or soft substance, for destruction of the mucous membrane of the canal produces granulations which ultimately obstruct the passage of the secretions. In severe cases it is well to remove a part of the anterior ethmoidal cells.

In the extreme polypoid cases the ethmoid bone is rather brittle, and parts can easily be removed. The bone is almost flinty hard in the suppurative cases. After the middle turbinated bone has been removed, I drill or gouge an opening through the floors of the anterior and posterior cells, and then pass the anteroposterior clippers into the cells and

cut away as much of the floors as I can. In some cases I use the lateral clippers to remove the thick part of the floors, and a part of the internal lateral walls. I have relieved all cases by this method, and cured some; many of them continue to secrete a certain amount of a glassy, mucopurulent substance, which seems to come from the little cells which are situated in the deeper recesses.

The sphenoidal cells are not so difficult to open as some are inclined to think. In cases in which the septa are moderately straight, and in which the posterior end of the middle tubinated bone has been removed, the oozing pus can easily be detected at the point of the natural opening, high up and near the septum. The probe will often enter after careful use; a small, sharp, firm curette, passed in and then pulled outward will usually tear away the sides of the opening sufficiently for good drainage. I do not consider it safe to curette the upper and external walls of these sinuses. Careful scraping of the anterior wall and the floor often produces decidedly beneficial results. There has been much discussion about the distance from the margin of the nasal vestibule to the sphenoidal cells. If the measurements are taken from the point of exit of the natural canal to the center of the septum in front they will vary from $2\frac{3}{4}$ inches to $3\frac{1}{4}$ inches, and about one-fourth of an inch less if the middle of the ala is selected. Of course, the face must be composed, for contraction of the muscles will increase or diminish these measurements about half an inch.

Some good surgeons have made the statement that diseases of the antrum of Highmore should be treated on general surgical principles, as diseases of other cavities are treated. I beg to differ with them for many reasons. For instance, the mastoid cells can be obliterated and refilled with tissue and depressed integument. Who would be guilty of removing the external wall of the antrum maxillare and allowing the integument to adhere to the internal wall? This would effect a complete cure, but produce a hideous deformity. Who has not regretted the removal with the curette of an apparently hopelessly diseased mucous membrane, and the periosteum of this thin-walled cavity, and watched through many months the slowly recovering process by granulation tissue? Who has not watched a membrane, apparently beyond physiologic repair, do better without radical surgical interference than similar ones which had been over-curetted? The improvement in the treatment of antral disease will be made in the direction of effective, but conservative surgery.

When a stubborn case is presented the surgeon must decide whether he will operate through the nose, by penetrating the antrum wall, either through the

inferior or middle meatus; or through the tooth-socket and alveolus, after Cooper's method; or through the canine fossa, Desault's method; or through the inner side of the alveolus, near the junction of the hard palate and alveolus, as recommended by Zeim; or through the malar ridge, which I believe was first strongly advocated, in certain cases, by the writer. Probably there are cases in which each of these operations, respectively, would be the best. The judgment of the operator, which must be based upon experience and a careful consideration of every point, must be relied upon for the proper selection. In those cases in which the evidence points to a tooth as a cause, I would advise removal of the tooth and penetration of the antrum through the socket which contained the diseased root. This is such a simple and harmless procedure that it is well to employ it as an expectant treatment, excepting in the very grave forms of disease. I prefer the operation through the malar ridge and canine fossa in all instances when the symptoms indicate that the tissues are extensively degenerated.

CASE XLVI.—Mrs. D., aged twenty-eight, consulted me during March, 1895. She gave the following history: During March, 1894, she began to suffer from a copious discharge from the posterior nares, and two months later a dull, aching pain began in the right upper jaw, which increased, and extended to the eye. An ulcerated tooth was removed from that side, and the dentist made a diagnosis of empyema of the right antrum. He drilled into the antrum, and found pus which was very offensive. He treated it daily for about two months, with but little relief. The electric light produced a dark umbra under the right eye, and there was a bright spot beneath the left eye. Muco-pus flowed from the hiatus downward and backward over the posterior tip of the inferior turbinated bone. I curetted the antrum as well as I could through the small opening on different occasions, and treated the patient a few months, with but little relief. There seemed to be extensive necrosis and caries of the floor and the anterior and internal walls of the antrum. At the New Amsterdam Eye and Ear Hospital, the patient being under ether, I made a large opening into the antrum, removing the external part of the alveolar process, and extended the opening up into the canine fossa. The walls were rough, carious, necrotic, and covered in places with ugly suppurative granulations. This surface was carefully and deeply curetted, the cavity packed with gauze, and there was decided improvement in the symptoms. The aperture was kept open with a large rubber tube for several months, and recuretted at intervals of about six weeks. Exuberant granulations would spring up, and also circumscribed areas of carious and necrotic bone, preventing cicatrization. The membrane gradually closed around the tube, which I excised under cocain with a Graefe knife, and the diseased area gradually lessened and

improved. At present there is a slight amount of mucus, but this is not troublesome, and the symptoms of diseased bone have disappeared. There are still many rather firm granulations which seem to be cicatrizing over the region which was deprived of its mucous membrane and periosteum.

CASE XLVII.—Mrs. H., aged twenty-seven, applied to me for treatment during 1895. She gave a history of nasal discharge, which dated back to her infancy. About three years before I saw her pain commenced in the face and head, which was more severe on the left side. There was a discharge of matter and crusts from the nose, and her headaches had been so severe that morphin was necessary to relieve her. She had also suffered from photophobia. The electric light produced an umbra beneath both eyes. Mucopurulent crusts were lying in the middle meatus, near the antrum of Highmore opening, and there was a general appearance of atrophic rhinitis. During April, 1895, I drilled through the malar ridge (the first molar tooth being absent), making an opening about eight millimeters in diameter, and found that the cavity contained pus, muco-pus, and some granulations. I curetted it very carefully, and inserted a rubber tube, and irrigated the cavity regularly. The incrustations in that region, which indicated atrophic rhinitis, disappeared entirely, the pain ceased, and the patient improved remarkably.

CASE XLVIII.—Dr. S., age forty, applied to me during the spring of 1895. He was suffering from an unpleasant nasal discharge, which was confined to the right side, headaches, and a constant dripping into the throat. He had suffered from this condition for about one year. Examination demonstrated muco-pus in the middle meatus and around the middle tubinated body. There was a slight deflection of the septum, with rather a large exostosis pressing into the under surface of the inferior turbinated and the parts around the hiatus. I made the diagnosis of ethmoiditis and exostosis. The parts were so pressed together in the middle meatus that it was impossible to arrive at any definite conclusion as to the extent of the disease. I sawed off the exostosis and removed a part of the tubinated. After treating him for several weeks the secretion lessened. At his own suggestion my attention was directed to the antrum, in which region he complained of a peculiar sensation. I passed a tube into the antrum, and on irrigating a quantity of very offensive pus came away with the fluid. These irrigations were kept up for some time, and he improved to a certain degree. He continued, however, to be annoyed by a discharge of muco-pus, but in a much lesser degree than before. I had noticed a defective first molar tooth, and suspected that it was the cause of the trouble. I requested him to have it extracted, which he did, and necrosis was found at the end of the root. The antrum was irrigated through the socket for several weeks, and he improved steadily, and in six months was apparently well.

CASE XLIX.—Miss S., aged twenty-two, applied to me in June, 1895. She gave a history of having had polypi removed from the nose since her fifteenth

year. Upon examination, polypi and pus were observed in the right middle meatus. The electric light showed a dark umbra beneath the right eye, and produced a light spot beneath the left eye. The polypi were removed with the snare and forceps, and pus continued to ooze from the antrum. During the previous March she had had an abscess at the root of the first bicuspid tooth, accompanied by intense pain and neuralgia extending over the entire right side of the face and behind the ear. This yielded only to heavy doses of opiates, and at the end of two weeks it suddenly disappeared. On June 14th, under ether, I performed the canine fossa operation, making an opening large enough to admit my little finger. The cavity was full of pus, granulations, and polypi. The cavity was curetted and packed with iodoform gauze, and redressed on the 16th, 17th, and 19th. After this she had some nausea and pain, with a temperature of 100.6° F., and also attacks of depression, "smothering," and wheezing. All the packing was removing and the cavity was insufflated with aristol. The patient improved rapidly. A soft rubber tube was kept in place for several months, and the discharge gradually ceased. The opening was allowed to close. I examined her on February 4, 1896, and found both antrums bright by transillumination; there was a very slight collection of muco-pus in the right middle meatus, apparently coming from the ethmoid. The patient feels that she is entirely well.

CASE L.—Mrs. C., aged fifty, applied to me on July 11, 1895. Her previous history was that pain had commenced fifteen years before in the left upper jaw, and had continued for ten years; then an abscess discharged into the left nostril from the antrum. The last molar tooth was extracted and found to have an exostosis on the fang. Her physician advised that the antrum be entered through the socket. This was done, and considerable pus came away. It continued to flow for two years, and the cavity was reopened twenty-two times. She never had been free from postnasal catarrh. Five years ago the right antrum began to be painful, and this continued until one year ago, when she consulted Dr. Roe of Rochester. He drilled into the right antrum, through the side of the alveolus, and removed pus, fungous growths, and polypi. She wore a tube five or six weeks, the wound closed, and she gained twenty pounds during the year. She had been suffering from a pain in the right antrum for the past few months, felt nervous, could not sleep, had chills, and muco-pus flowed into the throat constantly. On examination I found the middle turbinate hypertrophied, and a certain amount of suppurative ethmoiditis; pus was oozing from the left meatus, and the left infundibulum. The electric light produced a dark umbra beneath the left eye, the right being normal. She complained somewhat of the right antrum, and several surgeons had insisted upon reopening the cavity under ether. I tried to convince her that the right antrum was well, but in order to do this I made a small opening through the flesh which had grown over the aperture made by

Dr. Roe, and irrigated the cavity. The fluid came through clear, without a trace of pus. On November 8, 1895, I opened the left antrum through the malar ridge. The cavity was full of pus and granulation tissue. I curetted it carefully, packed it with iodoform gauze for a few days, and then inserted a rubber tube. The patient improved rapidly. I received a letter from her on February 20, 1896, in which she stated that she thought the antrum was entirely well, but that she was still wearing the tube. She expressed herself as being entirely relieved from the severe suffering which she had endured for nearly seventeen years.

SURGICAL TREATMENT OF EMPYEMA.

BY H. A. LEIPZIGER, M.D.,
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ABOUT twelve or thirteen hundred years ago, Paulus Ægineta, the recognized authority in medicine and surgery, had this to say about the surgical treatment of empyema: "The most effectual remedy which has been discovered for empyema is burning, wherefore the parts are to be burnt by applying the root of the long birth-wort soaked in oil, so as to form eschars, one of which we must make between the juncture of the clavicles, and two small ones a little distance from the chin and remote from the carotids, two of considerable size below the mammæ between the third and fourth ribs, two others between the fifth and sixth backwards, another at the middle of the sternum, and another above the mouth of the stomach, three behind, one at the middle of the back, and two on each side of the spine." Leonidas said: "Others, having passed a knobbed cautery through the interstice between the ribs to the abscess, have carried the burning down to the pus. Some have dared to operate upon them by making a transverse incision or one a little obliquely in the skin between the fifth and sixth ribs, then perforating with a knife the membrane lining the ribs and thus evacuating the pus, but they, and those who burn with iron to a considerable depth, either occasion immediate death, the vital spirit being evacuated with the pus, or occasion incurable fistulæ."

Several hundred years before this writer, Hippocrates referred to and recommended paracentesis for the treatment of empyema. At the present time, if one visits any large metropolitan hospital and inquires if any special operations are to be performed, one is likely to hear in an indifferent tone from the busy house surgeon that there may be also one or two "Estlanders," as though the Estlander operation was either a very minor affair or, at least, a daily occurrence. And so it really is; and when I say that it appears to-day to be the recognized treatment for empyema, at least of the chronic form, I have

about covered the ground selected for this paper, and it only remains to describe the operation and to mention, as a matter of historic interest, the various other forms of treatment and their originators.

The Estlander operation was reported in a Scandinavian medical journal in 1879, and consists essentially in the removal of portions of as many ribs as will tend to approximate the chest walls and the lung pleura at the site of the pus cavity, and thereby obliterate the cavity or encourage gradual filling out of the lungs. The operation is recommended when the disease is of long standing and the pleura very much thickened. The point chosen for the operation is that portion of the thorax beneath the axilla, as this locality is destitute of large muscles. If a fistula exists, it serves as a counter-opening; if none exists, a counter-opening must be made. Ordinarily the author of the operation made transverse incisions between the ribs; by a single incision he has laid bare two ribs and sometimes three. The resection is subperiosteal and, of course, is executed under strict antiseptic precautions. The fragments removed are from three to six centimeters in length.

In looking up the subject, I came across the following report of a case of American thoracic surgery occurring in 1858, which was very much like the Estlander operation, although the former was not done for empyema: A Dr. Cooper reports in 1858 to the San Francisco Medico-Chirurgical Society the case of a young man wounded by a slug of iron, which entered his left side, fracturing the sixth rib and remaining in the chest seventy-four days. The patient at this time was greatly prostrated, pus was being discharged from the opening made by the slug, the left lung had lost its function, and dyspnea was now alarming. A T-shaped incision was made, the soft parts reflected to expose the ribs, and an effort made to find the slug with a probe. Not succeeding, portions of the fifth, sixth, and seventh ribs were removed. In doing this, a discharge occurred of about ten ounces of bloody fluid, followed, upon breaking up some attachments, by another discharge of at least two quarts of pus. The pleura was very much thickened. The patient seemed to be rapidly sinking, and was given brandy freely and, after a time, chloroform. The thoracic cavity was explored for at least three-quarters of an hour with a sound, and the foreign body finally found by passing the instrument between the heart and the descending aorta. The forceps, following the sound as a guide, could not be opened without lifting the apex of the heart considerably out of its natural position. The patient recovered rapidly, and at the expiration of a few months seemed as well as before the operation, although the left breast remained somewhat sunken.

Dr. Daniel Brainerd, in 1857, reported a case of empyema treated by injection of iodine. He used a gum-elastic tube of the size of a No. 9 catheter and washed out the pleural cavity night and morning during several months. The patient recovered. In 1860, Dr. Goodfellow dilated upon the successful result of drainage in empyema. He inserted a rubber tube through the fistulous opening or puncture made by a trocar and pushed the tube through a counter-opening made posteriorly and low down. In 1873, Dr. J. Sheperd Fletcher reported a case of empyema cured by five operations of paracentesis and the use of a drainage tube. In 1877, Dr. J. G. Blake of Boston advocated free and early incision in the treatment of pyothorax as soon as the presence of pus was determined, and the subsequent washing of the cavity with antiseptic solutions as soon as the discharge became offensive. In 1879 the Estlander operation was first described. In 1881, Professor King reported decidedly in favor of free incision and drainage whenever pus was present, claiming recovery in from one to three weeks when a strong solution of chlorid of zinc was used. In 1882, Professor Dieulafoy emphasized the fact that it is impossible to transform a simple into a purulent pleurisy by thoracentesis with clean instruments.

Baccelli, an Italian physician, maintains that the nature of the liquid within the chest can be ascertained by means of the whispered voice. If the liquid is serous the whispered voice is well transmitted through the liquid and is pectoriloquous, but is not well conducted when purulent. Dr. Austin Flint did not place much dependence upon this means of diagnosis, asserting that the nature of the liquid can be ascertained much more rapidly and equally as safely by exploratory puncture. In 1882, Dr. Bruglocher advocated the practice of resection of several ribs in cases of long-standing empyema in adults. In 1884, Dr. Janeway called attention to the danger of general anesthesia in operations for empyema, particularly when there is perforation of the lung. He allows the fluid to run out until the patient feels distressed. Dr. Beverly Robinson advises tapping several times before resorting to radical operation. Dr. A. A. Smith thinks the hypodermic exploration alone sometimes favors absorption.

Dr. J. Fayee Finney reports a case of sudden death in fibrosis of the lung from a somewhat rapidly accumulating pleural effusion, emphasizing the necessity for the removal of these accumulations in cases of phthisis.

In the *Lancet* for January, 1886, Mr. R. J. Godlu says that children recover from the various operations and dispose of the residue of pus more easily than adults. In several cases a single aspiration in

each effected a permanent cure. If aspiration has been employed several times without success, he advocates fully opening the cavity a little below and outside the lower angle of the scapula and excising parts of the eighth and ninth ribs. In doing Estlander's operation he prefers removing the thickened periosteum. In children, an attempt to dispense with drainage may be made much sooner than in adults, in whom the tube should be worn as long as pus is discharged. Patients with phthisis and empyema should not be operated upon unless the latter is causing much inconvenience. The same applies to cases in which the pus is quietly discharged through the bronchi.

Cormack reported forty cases in which there were ten fatal results from Estlander's operation and ten complete cures. The procedure is best carried out after an interval of from six to twelve months has elapsed since the formation of a fistula. A very large cavity, extensive tuberculosis, and communication with a bronchus are contraindications. In 1886, Dr. Kassanali reported twenty-one cases treated by slow, gradual drainage, free drainage with a tube being used only when the chest cavity had been entirely emptied. The tube was removed on the thirty-fourth day, recovery being expected on the forty-fourth day. A rib was not removed. In 1887, Dr. W. H. Strickler described a modification of the Estlander operation. He removed enough of the fifth, sixth, and seventh ribs to allow of exploration of the whole pleural cavity with the entire hand, except the thumb, removed bands likely to hinder expansion of the lung, and removed all fibrinous masses. Five successful cases were reported. In 1889, Dr. William Williams described a treatment by means of a valvular tube, the principle of which consisted in removing atmospheric pressure from the external surface of the lung while the opening in the chest wall still remained, thus enabling the lung to fulfil its function and fill up the side of the chest from the first without waiting for any falling in of the side. He reported three favorable results. In 1890, Dr. Pel presented an excellent analysis of one hundred cases, and in summarizing, said that the radical incision, sometimes combined with resection of the ribs, is by far the most efficient method, and is the only one which assures definite results. In very recent cases, however, the radical operation must not be too quickly undertaken, not only on account of danger of infecting the pleura from without, but on account of a recrudescence of the pleural inflammation. An expectant procedure is adapted to those cases in which there is a small circumscribed empyema, without such symptoms as fever, general weakness, rapid pulse, and disturbed digestion. In 1890, Dr. Voël-

ker reported a death from neglected empyema in which perforation of the esophagus and erosions of ribs took place.

In July, 1891, Dr. Henry Koplik published an article on the "Etiology of Empyema in Children," in which he credited the first aspiration and exploratory puncture of the pleural cavity to Bowditch, the American physiologist. His cases were all treated by resection and drainage, and when, as in two cases, the pus became putrid, he attributed this not to admission of air into the pleural cavity nor to bacterial infection from the lips of the wound, but to retention due to insufficient drainage or want of proper expansion of the lung. Dr. Handford of Nottingham, England, reported a double empyema following an illness of three-weeks' duration in a boy seven and one-half years of age, in which both sides were resected at intervals of ten days by removing a piece three-quarters of an inch in length from one rib on each side. Both tubes were removed at the end of nine weeks. Dr. E. M. Light of Leeds, England, reported three cases of pulsating empyema cured by aspiration and drainage.

In March, 1891, a committee of the Belgian Academy of Medicine reported upon the status of the Estlander operation. The report set forth that while this operation occupies a legitimate place in surgical practice, its use is not absolutely necessary in all cases of protracted and extensive empyema. Verebelaje, January, 1891, held resection of a rib generally to be unnecessary, and only indicated when approximation of the ribs hinders free exit of pus. He is in favor of frequent washings with lukewarm 30-per-cent. boric-acid solution, and reports recoveries in from 70 to 80 per cent. of his cases.

Popon states that the literature of this subject shows that prior to 1877 only thirty-six cures after puncture of the pleura had been reported, and of this number there were only seventeen recorded cases of permanent cure. From 1877 to 1883 there is a record of twelve additional cures. During the same period there is a record of 151 radical operations, with 120 cures. From 1883 to 1892, 70 cases were reported, with 9 deaths. During the same period only two successful punctures were reported, hence the radical operation in children is to be preferred.

Dr. Edward Martin reports eight cases, and advises simple puncture in recent cases as the first operative intervention. If this is not sufficient, incision in the fifth intercostal space should be performed. Despite the opinion of Schede and Ziemssen, resection should be reserved, in the author's opinion, for exceptional cases. In August, 1892, Drs. E. B. Hastings and Harford N. Edwards presented a report of the then condition of twenty-four children upon whom the

operation of resection of the ribs for cure of empyema had been performed from one to seven years previously. Careful examination revealed a completeness of recovery in the majority of cases which was surprising. Dr. Rust reports thirty-three cases treated by aspiration and drainage. In eleven clear cases without complications, ten patients recovered, the average duration of treatment being 274 days. The result in all cases, regardless of etiology and complication, is much less favorable, the figures being: cured, 52 per cent.; improved, 18 per cent.; died, 30 per cent.

In June, 1894, G. A. Sutherland reported four cases of double empyema treated by double resection, irrigation, and drainage. He attributed the rapid recovery to his having employed temporary drainage—that is, only seven days, instead, as formerly, seven weeks. The most expanded side should be operated on before the other, as simultaneous drainage has caused alarming collapse. An important part of the after-treatment is forced respiratory movements and chest-expanding exercises. In 1895, Edmund Cantley of London published his deductions founded upon the records of eighty-six cases of patients under twelve years of age. He does not believe the chances of perfect cure are better under treatment by resection, as more of the patients were discharged with a sinus than in the cases treated by incision. Early contraction of the side follows resection more frequently than incision. He states the indications for resection as follows: (1) When the closeness of the ribs prevents drainage; (2) when drainage after the simpler operation is imperfect, as shown by high temperature and offensive discharge; (3) when the lung has re-expanded and the chest walls have contracted, and yet the sinus does not close. In double empyema he thinks the best treatment is simple incision and drainage at intervals of a few days between the two operations. He first aspirates both sides, relieving the heart from pressure, next day operates on one side, preferably the left, and a few days latter on the other. Local anesthesia should be used when the effusion is general on one side and localized on the other, the full side should be operated on first. In double localized effusion, simultaneous drainage may be adopted, but it is wise to wait a few days between the two operations. Dr. G. C. Cumston reports six cases of cure by means of the siphon of Revilloid. This siphon consists of a tube of black rubber three feet long, inserted into the pleural cavity. Two feet from the proximal end is placed a bulb, and the distal end is placed in an antiseptic solution. The proximal end is held in place by plaster. There is no resection of the ribs.

OBSTRUCTION OF THE BOWELS.¹

By A. C. TAYLOR, M.D.,
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On the afternoon of December 25, 1896, I was called to the village of Two Harbors to see a young man, who presented the following history: He was sixteen years of age, strong and well-developed, and never had had any illnesses other than those incidental to childhood. On December 20th he had slight colicky pains, which induced him to take a laxative, which gave him relief. No amount of questioning elicited a history of pain previous or subsequent to that time until the following Thursday (the 24th), when he had more or less pain all day, but not of a character so severe as to cause him to make any complaint until evening, when it became so marked that the family physician, Dr. J. D. Budd, was sent for. Dr. Budd at once attempted by the use of saline cathartics and enemata to move the bowels, but without success. Vomiting commenced about 10 P.M. and continued until 4 A.M., when it subsided until about four in the afternoon. Cathartics were not administered after vomiting commenced, but injections of water, glycerin, olive oil, etc., were freely tried, until the rectum became so irritable that this method of treatment had to be abandoned. During all of this time the patient had not received opiates, so that when I arrived, at about 4.45 P.M., on Friday, the 25th, the symptoms were in no way obscured. I found him with a pulse of 100, temperature 103° F., respirations 20, pain remitting, countenance fairly good, and constipation complete. At about 4 P.M. he had vomited nearly a quart of yellowish material, evidently from the intestines, but free from stercoraceous odor. He had not taken anything solid or liquid into the stomach since early morning. He had frequent eructations somewhat resembling singultus. Tympanites was slight, but pain and tenderness were extreme, being greatest in the left iliac and lower central part of abdomen, with a limited area of dullness midway between the umbilicus and pubes. Peristalsis, as determined by auscultation, ceased at this point.

I diagnosed an acute obstruction, with a local point of inflammation, due to an unknown cause, and decided that an operation offered the only hope of saving the patient's life. The attending physician concurring in this view, as soon as preparations could be made, which required a few hours' time, the abdomen was opened in the median line, and the exploring finger soon came in contact with a mass of recent adhesions involving the ileum. The abdominal incision was then enlarged and the whole mass carefully lifted out on warm towels. The adhesions between the coils of intestine were broken up, when the cause of the trouble was found apparently to be a volvulus, but which upon further investigation proved to be a diverticulum. This loop or sac had become strangulated, probably from stasis of fecal matter, and gangrene and perforation had occurred, the opening being as large as the end of the little

¹ Read before the St. Louis County Medical Society, March 1, 1897.

finger. The loop was removed, with sufficient of the gut to allow of healthy tissue being obtained on each side, probably six or eight inches in all, and the ends of the divided gut were brought together and united with the Murphy button.

On the following day the boy's temperature was nearly normal and his pulse about 86. His recovery was uneventful, except that following the separation of the button, which probably occurred on the seventh or eighth day, there was considerable gripping pain, with constipation for two or three days, while the button was passing through the last few inches of the ileum. The button was passed on the eighteenth day.

Determination of the method of treatment in a case of ileus must depend upon an accurate diagnosis; and this is the point which I desire to bring out in this discussion. In making a diagnosis we must depend, *first*, upon the history; *second*, upon the symptoms, and, *third*, upon physical exploration. In order to fully understand the lessons which these teach, and to draw proper inferences from them, the causes which may produce obstruction must be understood.

For convenience, I shall consider the causes of ileus under nervous and mechanic heads. The nervous causes I divide into (*a*) direct, (*b*) reflex, or, if it is preferred, central and peripheral. Among the direct or central nervous causes we find spinal paralysis from injury or disease of the spinal cord, injury or disease of the splanchnic nerves, and narcotic and ptomain poisons, such as opium and tyrotoxin, and, I believe also, the salts of lead. To the reflex or peripheral causes may be ascribed the passage of renal or biliary calculi, a compressed ovary, peritonitis from all causes, and perhaps also simple mucous ulcer. Among the mechanic causes we have simple obstruction from foreign bodies, such as impacted feces, enteroliths, biliary calculi, etc., and constriction of the lumen of the gut or of the blood-vessels supplying the part, or both.

Of all the various symptoms which may and do arise in these cases, there are but three which are common to all, *viz.*: persistent pain, persistent constipation, and persistent vomiting. (In intussusception in children it is to be remembered that mucous and bloody diarrhea is frequently present instead of constipation.)

Let us now observe some of the points characteristic of each of the above divisions, if any can be found, by which we may determine to which class a case belongs. Ileus, from central or direct nervous causes, will present a history of injury or disease of the nerves, retention of urine, and altered reflexes. In opium poisoning there is slow respiration, contraction of the pupils, and somnolence. In lead poisoning

the occupation of the patient, the blue line on the gums, and retraction of the abdomen, will serve as a guide to a correct diagnosis. Ptomain poisoning is not so easy to distinguish, but usually there will be convulsions or muscular tremor, paralysis, and dilation of the pupils.

Taking up the reflex or peripheral division, we find that in biliary calculi assistance in arriving at a correct diagnosis is rendered by the history of previous attacks, by the character and seat of the pain, and by the presence of jaundice and a slow pulse. In renal calculi there will probably be a history of previous attacks, which, together with the character and location of the pain, which is peculiar and which probably precedes the symptoms of intestinal obstruction, makes the diagnosis tolerably certain. In compression of an ovary, a vaginal examination will reveal a displaced organ which is tender to touch, or which is pressed upon by a tumor or adhesion. The temperature and pulse are not much altered unless the condition is accompanied by local peritonitis.

In ileus due to mechanic causes, fecal impaction is easy to diagnosticate, through the presence of the soft, nodular, doughy mass, which nearly always is located in some portion of the colon or rectum. The slow development and flat percussion note of the mass are also important factors. The presence of other foreign bodies, such as impacted biliary calculi, and enteroliths, is not so easily recognized, and my belief is that a diagnosis is impossible except by ocular or direct digital examination.

We may, then, in a case of ileus, easily recognize any of the above conditions when they are present, or eliminate them if not present, with the exception of the two last-named. We will then have left the cases due to constriction either of the lumen of the gut or of the blood-vessels, or both. These cases may be divided into the chronic and acute variety. In the chronic cases may be found tumors and abnormal growths involving the intestinal tract or mesenteric vessels, contraction of cicatrices, adhesive bands, etc. In the acute class will be found wounds of the gut or vessels, intussusception, strangulation, as in hernia, volvulus, or slipping of a portion of the intestine through loops of adventitious growth.

Intussusception may be inferred by the age of the patient, acuteness of the attack, severity of pain with periods of intermission, and occurrence of mucous and bloody stools. In one-half of the cases a tumor can be felt in the left inguinal region. External strangulation, as in hernia, is, of course, easily diagnosed. Internal strangulation, by volvulus or otherwise, usually can be made out by the acuteness of the attack, severity of the pain, and occurrence of shock and tampanites, peristalsis ceasing at the point

of strangulation. Whether there be tumefaction at the point of constriction depends largely upon the manner in which the compression is made. Experiment upon animals has shown that constriction of the mesenteric vessels, if the parallel artery is intact, causes an edematous condition of the intestinal walls, with transudation of fluid into its lumen; whereas, if the parallel artery also is constricted, death of that portion of the gut is immediate, and no distention, but rather absorption, takes place. (Murphy.)

From a surgical standpoint, cases of ileus resolve themselves into two classes—operative and non-operative. The question always before us, then, is, will the patient recover without surgical interference? Unfortunately, we cannot always decide this point. Cases which I have classified as of nervous origin, whether due to central or peripheral causes, including peritonitis, must be classed as inoperable.¹ In the second division, or mechanical cases, with the exception of instances of fecal impaction, the indications change, and surgical interference is almost the only course offering hope of success and should not be delayed a moment after the diagnosis has been established.

Of the treatment by distension with water, or inflation with gas, I can only speak in order to condemn. Take the case I have just cited, in which the perforation was sealed to the omentum and adjacent coils by plastic lymph only thirty-six hours old, as an illustration. Even a moderate amount of distension, by straightening out the coils, would have broken up these adhesions, opened the perforated gut, and caused an outpouring of fecal matter into the free peritoneal cavity, and death of the patient would have been inevitable, or, at least, highly probable. It appears to me that those who recommend distension with fluid equal to a pressure of four atmospheres can have had but little experience with the treatment. Dr. E. Martin of Philadelphia, while recommending this procedure, admits that it should not be made use of when the obstruction has existed for more than three days, owing to the possibility of gangrene or perforation having occurred, and advises that the surgeon be prepared to operate immediately in case rupture occurs. In the case cited above, perforation had certainly occurred within forty hours, and probably within a much shorter time.

One word regarding the so-called exploratory incision as a means of diagnosis. While in all cases in which an operation is performed the first incision should be small, only large enough to allow the oper-

ator to decide upon the nature of the disease, and the steps which are necessary to complete the operation, I believe that a small exploratory opening does not accomplish much in the way of diagnosis in intestinal obstruction, nor do I believe that it should be lightly undertaken. For instance, suppose an exploratory incision is made in a case of obstruction from any of the nervous causes mentioned in my classification. Teachers tell us if we find nothing, to sew up the wound and no harm will have been done; but in practice one finds a uniformly distended gut, and I have seen the whole ileum pulled out of the wound before it was decided that there was no cause for operation.

CLINICAL MEMORANDUM.

TUMOR (GLIOMA) OF THE LEFT TEMPORAL LOBE OF THE BRAIN; ATTEMPTED REMOVAL.

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THE diagnosis of brain tumor is very easily made, but the exact localization of the tumor is not always so readily determined. Yet this local diagnosis is of the greatest importance, as upon it depends the decision of the possibility of surgical treatment. It is a fortunate fact that the parts of the brain in which tumors can be most definitely located are the parts which are most easily accessible to the surgeon. But the signs and symptoms which make a local diagnosis possible are occasionally misleading. This fact should be regarded in every case, and hence it is well that failures and mistakes should be recorded as well as successes, for one may learn as much from the former as from the latter.

In a study of a collection of 300 tumors of the brain among children, made by one of the writers during 1889,¹ it was found that fifty-six of these were accessible to the surgeon. Sixteen could have been accurately located, and successfully removed. Among the remainder, there were several in which the symptoms pointed to an accessible location on the cortex, but the autopsy proved the site of the tumor to be at a considerable distance from the supposed position, either deep beneath the cortex, or at some distance from it, the symptoms having been produced by pressure transmitted from one part to another. This was also true of the case here reported. The symptoms in this case which indicated the location of the tumor were a slowly progressing motor aphasia, to which was added,

¹ I do not wish to be understood as saying that peritonitis or injuries or disease of the nervous system should never be treated surgically, but that one should not operate upon the intestinal tract to relieve a condition which is purely symptomatic.

¹ "Tumors of the Brain in Children," by M. Allen Starr, MEDICAL NEWS, January 12, 1889.

after three months, a rather rapidly increasing right hemiplegia. The localization was, therefore, made of a tumor in the left third frontal convolution growing backward and inward so as to compress the motor tract in its passage toward the internal capsule. On this diagnosis an operation was undertaken, but it failed to reveal any tumor in the part exposed. At the autopsy, ten days after the operation, the tumor, an infiltrating vascular glioma, was found deep within the apex of the temporal lobe. It must, from its location, have produced pressure inward and upward, as any pressure downward or outward was prevented by the walls of the skull. Such pressure naturally affected the function of the parts compressed, and as there were the third frontal convolution and the Island of Reil with the motor tracts beneath it in the capsule, the symptoms were necessarily misleading. They were indirect rather than direct local symptoms—to use the very apt terms first selected by Nothnagel.¹

It seems in many cases impossible to distinguish clinically between these varieties of local symptoms. Hence, even now, with an experience of 220 cases of brain tumors in which operations have been undertaken, reported in medical journals since 1885, it must be affirmed that in every case an operation for the removal of a brain tumor is an exploratory operation.

The case in question was as follows:

F., aged fifty-five, had been quite well until August, 1896, when she suffered severely from the intense heat, and this, combined with a prolonged mental distress consequent upon the illness and death of her husband, produced a condition of general nervousness. From this she appeared to recover gradually during the month of September, but in October she began to suffer from considerable pain in the head located quite distinctly in the frontal and temporal regions of the left side. This headache was of a continuous, dull, throbbing character, and remained during her illness. It was increased by any physical or mental exertion, by any sudden change of position, especially in stooping, and by the use of nitroglycerin, which was tried as a remedy. During August and September it was noticed by those about her that she would occasionally misuse a name or word, putting it in the place of the word she intended to say, especially if of like sound, but upon being corrected, or upon being asked if she meant to say the word which she had used, she would immediately correct the mistake. This was not very noticeable at the time, but was remembered in view of the subsequent history.

During October and November this defect of speech increased steadily. She noticed a progressive loss of power in remembering the names of old acquaintances and of friends whom she was meeting, and her misuse of words became more and more apparent to those with whom she conversed. In spite of this defect, she appeared to be quite active; she went out and saw many friends, and was vigorous, walking considerable distances, had a good appetite, good sleep, digestion was normal, kidneys were normal, and her headache though constant was never very intense. During the first two weeks of November her

headache become more severe and a marked nervous and mental excitability was evident, with considerable depression of spirits and some embarrassment and anxiety at her supposed failure in mental vigor. She became painfully conscious of her defect in speech and of her loss of memory of words, and the aphasia now increased to the point where all long sentences were avoided and the misuse of words was more constant. At the same time she was conscious of her defects, attempted to correct her mistakes and usually succeeded in doing so. It was now noticed that similar mistakes were made in her writing, that she omitted words, or occasionally repeated words or wrote words which had no relation to the sense. In addition to this progressive aphasia and agraphia there developed during the last two weeks of November considerable physical weakness. She became easily tired upon walking, or upon any exertion, but this weakness did not appear to be limited to one side of the body.

On December 2d, she had a sudden attack, without loss of consciousness, in which she lost the power of speech entirely, and seemed to be very weak, though her radial pulse remained at about 80, her pupils normal and equal and her intelligence active, but there was a marked weakness of the right hand and leg, and she appeared to be very much prostrated. She remained in bed for two days at this time, and when she got up it was noticed that there was slight paralysis on the right side of the body, so that she staggered in walking, dragged her right foot, tended to fall toward the right side and was awkward in the use of her right hand. Five days after this attack, however, she was able to make the journey from Ohio to New York, though she remained in bed all the way, and it was noticed that on her arrival she was weaker on the right side of the body than when she started.

Examination on December 9, 1896, at St. Vincent's Hospital: A large, fleshy, well-nourished woman, apparently in a state of good intelligence, active mentally, observant, and understanding perfectly everything that was said to her. The pupils were equal, and there was no ocular paralysis or apparent disturbance of vision; power of smell normal; optic neuritis was found on both sides, more marked upon the left. Slight, but well-marked, right hemiplegia involving the face, tongue, arm, and leg, without any sensory disturbances, was present. The right side of the face was slightly flatter than the left, and the tongue deviated slightly to the right. The chief loss of power was in the right arm, which was somewhat awkward, had only two-thirds of the power of the left, and was slightly ataxic in its movements. The right leg was dragged somewhat in walking, and was distinctly weaker than the left, so that she staggered toward the right side and was uncertain in her gait. The knee-jerk was increased on the right side; ankle clonus present. Control of the bladder and rectum was perfect.

The condition of aphasia was very marked. She appeared to understand what was said to her, but attempts at talking were confined to single words, and a long connecting sentence was impossible. Her words were occasionally unintelligible and she realized the mistakes that she made. It was as impossible for her to read as it was

¹ "Topische Diagnostik der Hornkrankheiten," Berlin, 1879.

for her to talk, and she could not repeat words after another. Her power of comprehension of things seen was good. She was unable to write, not so much on account of the loss of power in the arm, which was not sufficient to interfere with writing, but apparently because of a true agraphia. She did not seem to be able to recollect how to make the letter, or how to write figures, though when they were written for her she could read them and add them correctly. There was no apraxia. There was no anesthesia of the body and no hemianopsia. Constant pain was felt over the left temporal region, which was sufficient to keep her awake at night, and was the chief cause of her distress. It was quieted somewhat by the use of phenacetin but was markedly increased by the use of nitroglycerin. There was some tenderness on percussion over the left temporal and frontal regions, and a marked difference in the sound of the percussion note upon the two sides of the forehead, it being flat on the side of the tumor.

Diagnosis.—In view of the gradual progressive onset of the disease, headache, optic neuritis, tenderness along the head upon the left side and steadily advancing motor aphasia, followed by right hemiplegia, the diagnosis was reached of a tumor of the brain, and its location was thought to be in the third frontal convolution upon the left side. Although there were no evidences whatever of syphilis, it was thought best to prescribe inunctions of mercury and rapidly increasing doses of iodid of potash. This treatment was at once begun and pushed vigorously for two weeks. During this time her symptoms increased rapidly and by the 20th of December the right hemiplegia was almost complete, the aphasia was total, she could no longer read, and it was sometimes uncertain whether she fully understood what was said to her. Her speech was reduced to the words "yes" or "no," and these were not always properly used. Her headache became more and more intense, the optic neuritis increased rapidly, she was extremely restless at night, and she frequently vomited her food. It being evident, therefore, that the treatment was producing no affect, it was resolved to operate with the view of removing the tumor. The propriety of operation was concurred in by Drs. J. O'Dwyer and Callan, and by Dr. Robert F. Weir, who was called in as the consulting surgeon.

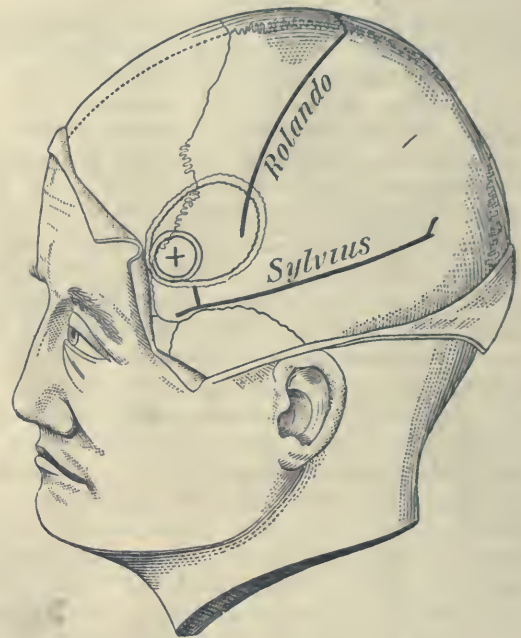
Operation, December 24, 1896, by Dr. Weir. The scalp previously having been shaved and duly disinfected, under ether anesthesia the lines of the fissures, Rolando and Sylvius, were not only marked out on the skin, but through two punctures made through the scalp to the skull over each fissure the pointed end of a disinfected pencil was rubbed on the bone beneath. This was also done over the third frontal convolution, the supposed locality of the tumor. The usual large curved flap, some three inches wide at its base, was then made and turned downward.

To control the usually free and sometimes dangerous hemorrhage from this incision, instead of clamps or a rubber band passed around the head with the temporal regions duly padded, the operator used here satisfactorily, as on several previous occasions, short hat pins, which

were passed in and out across the base of the flap itself, while around the head and projecting point of each pin was stretched one of the ordinary rubber bands of small size used for bundles, etc. Two of these pins sufficed to check the bleeding, and a similar use of these pins and rubbers along the other part of the divided scalp controlled the oozing and spurting of blood. Of course the bleeding from the bone itself had to be met, when it required attention, by the ordinary methods in use.

An inch trephine rapidly cut through a rather thin skull, and this area was enlarged with ease and promptness by means of Hoffman's rongeur forceps, until an opening two by two inches was made. This method of opening the skull was chosen as no facilities for using the electric saw with Weir's dura protector¹ were present; but in either case, the operator's preference since 1887 has been, in all cases in

FIG. 1.



The cross represents the supposed location of the tumor, the small circle the trephine opening, and the large circle the opening made by the rongeur.

which the question of a tumor arises, to leave a permanent opening in the skull to guard against either a recurrence of pressure from renewed or from another growth, or to give relief in case a growth is not found, or cannot be removed. The opening in the skull is shown in Fig. 1.

The dura was now divided about an eighth of an inch from the bone, and reflected downward in an oval flap. This procedure, the ordinary one, is not so good for a resuture as a crucial incision, but it affords a freer scope for examination of the cerebral surface. In this particular instance, in which the growth was not found, and, therefore, the pressure not relieved, considerable difficulty was experienced in closing the gap in the dura, and this was

¹ "Trans. Am. Surg. Assn.," 1897.

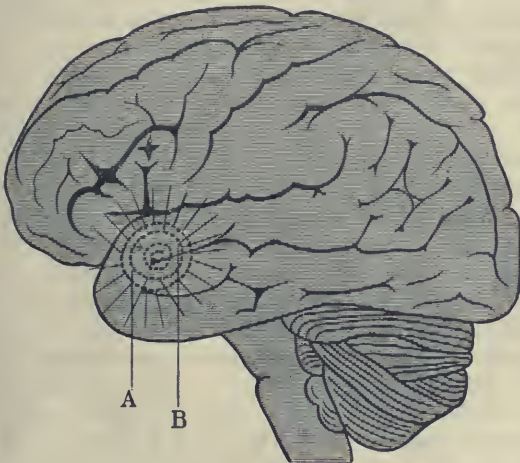
accomplished by inserting some gold foil¹ beneath the still gaping edges of the dura mater.

The exploration of the brain by sight and moderate palpation revealed no growth or change of circulation or nutrition. Deeper palpation, admitting the finger-end underneath the edge of the divided skull for nearly an inch in varying directions, detected no abnormality, nor did a needle meet with any resistance.

With regard to the procedure of exploring the brain for deep-lying tumors, needles or other instruments are of but little use. The finger is the best tool, and experience, as well as the tests of Adamciewicz and others, has shown that the brain will bear steady firm pressure to a great degree, if not too long continued. I have also had aid in obscure cases by opening up a convolution and making pressure at its bottom. In one instance I thus recognized, at a depth of $1\frac{1}{2}$ inches in the white substance, a tumor not otherwise to be felt.

Here, as the exploration thus carried out failed to detect the neoplasm, the operation was arrested, the dura closed in the manner already detailed, and a thin layer of

FIG. 2.



The cross shows the supposed position of the tumor, the dotted lines its real location beneath the cortex, and the radiating lines the direction of pressure exerted by the growth.

A, plane of section shown in Fig. 3.
B, plane of section shown in Fig. 4.

iodoform gauze laid over the lower half of the replaced dura, and laid out through the postero-inferior edge of the wound. The scalp flap was replaced and fastened with interrupted sutures of fine black silk, and the usual aseptic dressings applied. No improvement followed the operation.

The patient's temperature, which was 102° F. after coming out from under the influence of the ether, came down gradually to 100° F., and did not rise again. The wound healed perfectly without suppuration, the sutures being removed on the fourth day, and her pulse was quite regular and natural, but she gradually sank into a comatose condition, the hemiplegia becoming absolute and the aphasia total. During the last two days she was unable

¹ Gutta-percha tissue will answer even better than gold foil. The latter recently has been found to be penetrable by granulation-tissue, and, therefore, does not so surely prevent adhesions.

to swallow, and was comatose, and died quietly on the eighth day after the operation.

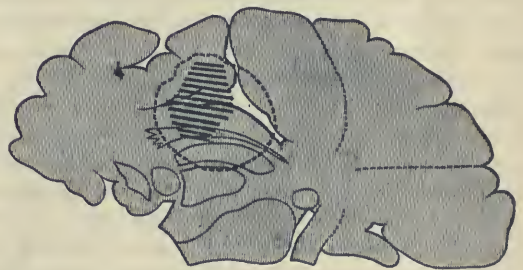
Autopsy.—A complete examination of the brain was not permitted, but an exploration through the opening in the skull was allowed. It was found that the scalp had healed perfectly, and there was no evidence whatever of pus in the dura or the brain. The process of healing with adhesions of plastic lymph had everywhere begun. On exposing the brain by laying back the dura, no special bulging was observed; its convexity was perfectly smooth. Excision of the frontal and parietal region beneath the opening failed to reveal any evidence of disease in the brain, but palpation downward revealed a considerably harder consistency of the anterior portion of the temporal lobe. This became more evident as the finger was passed into the fissure of Sylvius, and pressure downward within this fissure was made. Removal of the anterior part of the temporal lobe, including the Island of Reil, revealed the existence of a large infiltrating glioma somewhat harder

FIG. 3.



Section through the left hemisphere, showing the tumor. The dotted line shows the area of compression.

FIG. 4.



Section through the left hemisphere, showing the tumor. The dotted line shows the area of compression.

in consistency than the brain about it. This occupied the white matter of the apex and median portion of the temporal lobe infringing upon the Island of Reil and exerting pressure inward, forward, and upward. It lay about one inch beneath the cortex of the first temporal convolution and measured about one and a half inches in all directions. Microscopic examination by Dr. B. G. Briggs showed that the tumor was a glioma of considerable vascularity. In parts it was quite cellular, but not sufficiently so to be classed with the gliosarcomata. Within the tumor there were large areas of necrobiosis with small cysts and hemorrhages. The diagram shows the situation of the tumor as outlined upon the cortex and the sections show its situation within the brain.

AN ADDRESS.

THE INFLUENCE OF THE NERVOUS SYSTEM IN SKIN DISEASES.¹

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DERMATOLOGY is a subject of vast scope, and to be a successful cutaneous specialist the student must have considerable knowledge of general medicine. The study of this specialty will yield more profit practically, and more satisfaction scientifically, if the relations between this special class of diseases and the physiologic and pathologic conditions of other organs are thoroughly investigated and understood. The vascular, nervous, and lymphatic systems must all be studied and deductions drawn from them, for each organ of the body has more or less to do with the cause, progress, and prognosis of nearly all diseases affecting the cutaneous system. The earlier writers on dermatology taught that about all the treatment necessary was that which could be applied locally; in fact, many diseases were not treated at all, for their presence was considered beneficial to the general health. For instance, it was thought harmful to cure infantile seborrhea, or a chronic eczema affecting the legs of old people. As soon as skin diseases rose to the dignity of a special study there was a change, and thanks to the improved methods of examination, the light of advanced pathology and bacteriology, each cutaneous affection has been brought out of the obscurity which so long enshrouded it, and we are now able to understand these diseases with scientific certainty. The more we study the skin the more we are taught to recognize the great influence the nervous system has on the outbreak and course of many of its affections.

Before we consider some of the more prominent diseases traceable to disordered nerves let us glance at the physiology and anatomy of the skin. We are told that it is the external enveloping membrane of the body, giving support to the muscles and vessels beneath. It also serves as the regulator of temperature, and furthermore, protects against the introduction of infectious germs. The skin is divided into a number of layers; the one which especially interests us is that which is known as the papillary layer, situated on the free surface of the corium, consisting of numerous small, highly sensitive eminences, the papillæ. In some parts of the skin these eminences are very numerous, as for instance, in the palm of the hands and soles of the feet, while in others they are comparatively rare. Each papilla contains a papillary blood-vessel and a terminal nerve-fiber. Thus, the skin is a great sensitive envelope filled with innumerable nerve endings, which have their origin in the cerebral, spinal, and sympathetic centers. It is readily seen that in any irritation or disturbance of these ganglia the skin is made to participate, and if this irritation is continued for any

length of time the skin becomes more and more inflamed, and finally becomes thoroughly diseased.

Perhaps the most frequent neurocutaneous disturbance which the general practitioner is called upon to treat is simple acute facial erythema of the menopause, the so-called hot flashes. This is undoubtedly caused by some disturbance in the sympathetic system producing a sudden filling of the cutaneous capillaries; the inhibitory nerves to the papillæ being taken off their guard this phenomenon results. If this erythema continues for any length of time we next observe that the skin has grown thicker, and that small red lines have appeared about the nose and over the malar eminences. These are enlarged capillaries. Finally, small papulæ and pustules are seen and the condition is known as acne rosacea. This disease is not confined exclusively to females, for frequently we find it accompanying an enlarged prostate, which keeps up an irritation of the genital tract. The counterpart of this climacteric disease is simple acne, which occurs about the time of puberty. At this period of life the adolescent is passing through a wonderful change. Glands which have before been quiescent are stimulated into activity, while the nervous system is constantly in a condition of excitement. In boys there is more or less genital hypersensitiveness attendant upon the development of the sexual organs. In girls, at the beginning of menstrual life, there are frequently a number of peculiar reflex nervous phenomena, which have more or less effect on the cutaneous circulation, and this is often sufficient to cause the appearance of acne. We constantly hear the gynecologist lament the fact that so many young women have some form of menstrual irregularity, such as dysmenorrhea, amenorrhea, etc., each being capable of producing enough nervous reflex to cause acne. In treating these diseases these facts should be borne in mind, although the reflex cause, of course, is only one of many in the production of the eruption. Insure a thorough emptying of the rectum and then see to it that constipation does not recur. Try to relieve genital irritation in the male by the use of drugs, by passage of the cold sound, as recommended by Sherwell, or by urethral injections of cold water. If menstruation is attended by pain and much discomfort, hot vaginal douches will relieve the pelvic hyperemia and thus ameliorate the acne. Be constantly on the lookout for the neurotic causes, for if they are not detected and properly treated the patient will derive but little benefit from any external application you might prescribe.

Another neurotic skin disease which will be your fortune or misfortune to treat is urticaria (hives or nettlerash). No age or sex is exempt, although it is more common in females and children. The causes are so numerous that for convenience of study they should be classified, first, into direct or local irritation of the skin, and second, into indirect or reflected irritation. Under the first head is placed bites of insects, as fleas, mosquitoes, etc. The bite of a single insect will often produce enough irritation to cause an outbreak of urticarial wheals in regions of the skin far remote from the original bite. The irritation is conveyed along the sensory nerves, causing a reflex urticaria. Indirect irritation acts chiefly through the alimen-

¹ An address delivered by request before the students of the Medical Department of Syracuse University.

tary canal, usually the stomach or upper intestinal tract, the irritation being applied to the gustatory nerves and reflected on the skin. Possibly you have seen patients who always have an outbreak of urticaria after eating certain kinds of food, such as shell-fish or strawberries. These, with many other articles of diet, are capable of producing in some people severe attacks of this disease. Medicines, such as quinin, copaiba, morphin, etc., also have a similar power. This reflected skin affection is one of the nervous phenomena observed in children troubled with intestinal worms.

Disorders of the pelvic organs are frequently accompanied by urticaria, some women having attacks just before the menstrual period, or during pregnancy or lactation. I am attending a patient at present who has an urticaria arising from disordered genital organs. She is about forty-seven years of age, married, has never had any children, and for many years has been afflicted with various reflex and direct nervous troubles, all of which have been referred to the sexual tract. This attack of urticaria has existed for eight months, and began at the cessation of menstrual life. Urticaria is also seen in diseases of the nervous system, as locomotor ataxia. Some years ago Charcot reported a case of locomotor ataxia accompanied by a severe outbreak of giant urticaria. I remember a similar case, a man ill with posterior spinal sclerosis having all through his illness more or less urticaria, the rash being greatly aggravated when the spinal pain was severe. The mental attitude of a patient predisposes to this disease, depression and worry being sufficient to provoke an outbreak. Enough has been said to show that urticaria is primarily a vasomotor disturbance, direct or reflex, central, or peripheral. The course of events is probably this: a spasmodic contraction is followed by a paralytic dilatation of the vessels and stasis of the capillary circulation; exudation ensues, producing acute edema which lifts up the epiderm into a wheal. The treatment is apparent: give anything that will remove the reflex or direct irritation.

The influence of a deranged nervous system is seen in that common and protean disease, eczema. The eczematous patient is never in good health; he complains of being out of sorts, and there is a condition of nerve exhaustion, be it from worry or overwork, either of mind or body. I am inclined to think that the great struggle for wealth is often a cause of the eczema seen in business men of our large cities. Irritation of the alimentary canal or genital tract acting reflexly on the nerve-centers, and thus producing capillary dilation, will provoke an attack of eczema. Particularly is this true in children, for it is no uncommon thing to see an obstinate case of infantile eczema disappear almost like magic after the child's diet has been changed. The same result is observed after the loosening of a tight and adherent prepuce. Eczema has been known to occur as a sequel to neuralgia of certain nerves, and it is often associated with asthma. Frequently during the apparently successful treatment of eczema a sudden relapse occurs which often does more mischief in one hour than can be corrected by treatment in weeks. This certainly appears to be due to faulty innervation.

The fact that direct disturbance or disease of the nerves may produce disease of the skin is proven by the occurrence of zoster. Many theories have been advanced regarding its etiology. No matter how widely varied these theories may be they all point to some effect on the nerve ganglia or the nerve itself. Kaposi of Vienna is the strongest advocate of the theory of a nerve toxemia. I personally consider malaria to be an active cause, at least in those parts of the world where paludism is prevalent. The correctness of this opinion may be proved by an examination of the blood, and finding the malarial germs. I have reported a number of cases of zoster as occurring in Brooklyn in which the presence of these germs was demonstrated. The malarial plasmodium acts in a similar manner to any other toxic substance; it clogs the blood-vessels and impoverishes the blood and finally produces a form of neuritis. Arsenic has been recognized as being capable of producing zoster, on account of its action on the peripheral nerve ends. Poisoning from coal gas and carbonic oxid will also produce the same results. That zoster is a neurosis has been proved anatomically by Bærensprung, Charcot, and many others. The lesions observed are an interstitial inflammation of the posterior ganglion and a neuritis of the trunks of the nerves arising from it to supply the diseased cutaneous area. Chronic inflammations of the posterior columns of the cord have produced zoster while the ganglia and nerves were unaffected. In addition to inflammations producing neuritis, attacks of zoster often follow injuries about the exit of the nerves from their bony canal; as, for instance, pressure from blood clots, embolism, the presence of tumors and leprosy deposits.

Of all the ills that flesh is heir to there is probably no sensation so excruciating as itching when it becomes a disease. The dermatologist is often called upon to treat an affection known as pruritus. This is a functional defect in innervation, in which itching is the only direct symptom. Prurigo, an entirely different disease, is often confused with pruritus, but the former is a chronic inflammatory disease while the latter has no inflammatory objective symptoms. Pruritus is either general or local, and for the sake of convenience it is classified according to its location. A proper understanding of its etiology is very important, for upon this depends its successful treatment. In a certain way pruritus bears a relationship to urticaria, for the same organic disturbances will produce both. Organic diseases of the uterus and irregularities of the menstrual function will often cause it. Occasionally it is associated with hysteria, the presence of vesical calculi, vegetations of the urethra, hemorrhoids or intestinal worms. Ingestion of certain medicines, as opium, will sometimes cause it. In old age, when degenerative changes are taking place, pruritus is very frequently met with. It will be seen that the causes of the affection are very similar to those of urticaria, but the effect upon the skin is altogether different. It is primarily a functional disease, one purely of sensation, and should be viewed as being due to a reflex or direct irritation of any part of the nervous system from center to periphery, it not being accompanied by any appreciable lesion of the skin nerves.

Thus far only those diseases which are common and of

frequent occurrence have been considered. Patients suffering from acne, acne rosacea, eczema, urticaria, pruritus, and herpes zoster will consult you no matter where your practice may be, for no country or station of life is immune. The better you are prepared regarding diagnosis and treatment the greater will be your influence among your *clientele*. With your permission I will pass to those neurocutaneous affections which are more or less rare, the first occurring to me being pemphigus. This disease seems to be particularly fascinating to the youthful doctor, for I have seen hospital internes find more cases of pemphigus than almost any other skin disease, in spite of the fact that it is a disease of very infrequent occurrence, particularly in the United States. Its etiology is obscure, but all observers claim it to be of neurotic origin. It frequently accompanies various nervous diseases, such as posterior spinal sclerosis, degeneration of the peripheral nerves, chronic myelitis and acute spinal meningitis. In many cases it is difficult to determine just what the nerve defect is, but it probably has an origin in the vasomotor centers, or, as Schwimmer and others teach, it may be an atrophic neurosis.

Dermatitis herpetiformis is another of the rare diseases in which the etiology is obscure, but the consensus of opinion is that mental worry and anxiety predispose to an attack. I have had a number of patients with this disease, and at least in 90 per cent. there was some shock to the nervous system before the cutaneous outbreak occurred. Worry and loss of rest probably has a predisposing etiologic influence, but this does not militate against the theory of a neurotic origin, but rather strengthens it.

In people whose systems are run down from overwork and worry we frequently observe a rather rare disease known as lichen planus, an affection characterized by the appearance of pinhead or pea-sized flat papules with planed-off, shining tops, or, if the disease is further advanced, there is a slight scaliness. In our large cities many of the victims of this disease are girls who do hard work in badly ventilated factories or workshops. The remedies are simple: tone up the nervous system, insure proper action of the skin, relieve worry, etc.

In 1874 Raynaud of Paris published a monograph on a condition known as symmetrical gangrene of the skin. Since that time the disease has been called after him and now is known as Raynaud's disease. As the former name implies, it is a gangrene symmetrically distributed over the skin, generally affecting the fingers and toes. While the pathology is not by any means clear the disease is now generally understood to be due to a spasm of the arterioles, though whether this spasmodic condition is of central or peripheral origin cannot be positively stated, Raynaud considered it to be central.

Leucoderma, or whitening of the skin, is generally considered to be neurotic in origin. It is commonly understood that a person having white spots on the skin is apt to have some other neurosis. Closely allied with this condition is premature grayness of the hair. Almost as far back as can be remembered cases have been reported where the blanching of the hair has been attributed to sudden and severe nerve shock. The historic case of

Marie Antoinette is perhaps familiar to you all. Her hair is said to have turned gray in a night.

It is unfortunate that the subject of alopecia has to be gone into at all, as there is so much discussion and argument regarding this disease. Many good observers contend that there is only one cause, namely, nerve interference, while others equally well versed in dermatologic etiology claim that the sudden falling out of the hair in patches is undoubtedly due to the presence of some parasite, probably some form of the trichophyton. I will not attempt to prove or disprove the correctness of either theory, for there are plenty of cases which show that at least certain forms of the trouble are of trophoneurotic origin. Crocker, in his admirable work on skin diseases, classifies this disease in four distinct forms: First, universal cases developing rapidly and not necessarily in patches; second, cases in which one or more patches occur over the course of a nerve or the site of an old injury; third, in which small depressed atrophic spots occur (Neumann's alopecia circumscripta); and, fourth, parasitic cases. The first three he declares to be of neurotic origin. Universal alopecia frequently follows fright or a fall upon the head, and it is no uncommon thing to see bald patches after injury of the nerves about the head.

I have rapidly given you a short list of those diseases which we believe to be of neurotic origin. There are many others in which this etiologic factor is more uncertain, but for fear of tiring you I will refrain from going more deeply into the subject. From what has already been said, I trust that you may be able to glean some few grains of useful knowledge, so that when you have a difficult and obstinate case of skin disease to treat you will be on the alert to find out the workings of all the organs in the body, and particularly of the nervous system, always remembering that the cause of the cutaneous outbreak may be far remote from the site of the disease. When you have learned to do this, dermatology will cease to be a difficult study, and you will wonder why you ever thought it uninteresting and obscure.

MEDICAL PROGRESS.

Tuberculosis of the Spinal Cord.—SCHLESINGER (*Deut. Zeit. für Nervenheilkunde*, Bd. viii, Hft. 5 and 6) describes an interesting case of solitary tubercle occurring in the cervical cord. A healthy man was suddenly attacked with dizziness and pain, and difficulty in swallowing, symptoms which in great measure disappeared to return later in the disease with greater severity. There was disturbance of temperature sense, and shooting pains in the face, back of the head, and arms. The sense of touch and pain remained undisturbed, but that of muscular position was partly lost. As the disease progressed, atrophy of the muscles of the right hand and arm, and to a less extent, those of the left, developed, and there was stiffness of the neck with tenderness. The autopsy showed a fully developed tubercle in the cervical cord, covered in front and at the sides by a very thin layer of white matter, while behind, it was in places directly in contact with

the membranes. The gray substance of the cord was completely atrophied.

This is not the usual form in which tuberculosis of the cord manifests itself; more common is the symptom complex known as Brown-Sequard's, or a simple hemiplegia, or a complete transverse lesion of the cord. The symptoms here described are those of destruction of the gray matter, and the case may therefore properly be called "central tuberculosis." These central symptoms are often seen in spondilitis and in gliomata, conditions usually accompanied by remissions that are absent in tuberculosis.

The Origin of "Ascending" Suppurative Pyelonephritis.—

BAZY (*Centralbl. für Chirurgie*, May 8, 1897) is of the opinion that in most, if not all, instances of suppuration of the kidney and its pelvis, even the so-called "ascending" pyelonephritis, the infection is derived through the blood-vessels and not through the ureters. Experiments show that the introduction into the pelvis of the kidney of pathogenic microbes is not sufficient in itself to set up suppuration. There must also be as a predisposing cause, a kinking or compression of the ureter sufficient to produce a backing up of the urine. This explains why suppuration so often occurs in a single kidney.

A New Method of Suturing.—In the *Centralbl. für Gynäkologie*, May 15, 1897, ZWEIFEL describes a new method of applying a continuous suture which possesses the very great advantages of simplicity and rapidity of application. It is the stitch used on many "double-thread" sewing-machines, and is applied in the follow manner:

A straight blunt-pointed needle and the curved needle in a handle with an eye in its point (Peaslee) are both threaded and the threads fastened at one end of the line of suture. The Peaslee needle is then thrust through both edges of the cut, and the straight needle is each time passed through the loop in the eye of the curved one, and so a continuous suture is made, there being on each side of the incision a thread, while the crossings of the thread are all concealed.

In places where the skin is thin, this is of advantage, as it causes the fold to rise slightly in the middle; but in thick or fat skins this rise separates the epithelial edges too far, and then an extra precaution is necessary; either a turn of the thread in the straight needle must be made about the other before each stitch is taken, or a third thread is employed, which must be passed from one side to the other of the cut each time before the suture is passed through the skin. This keeps the edges flat.

A Prolonged Case of Diphtheria.—JESSEN (*Centralbl. für Inn. Med.*, May 15, 1897) reports a case of diphtheria that was unusual by reason of the length of time the disease persisted. The attack began, in a girl aged nineteen, by symptoms of general infection, and a facial erysipelas of a mild type. On the fourth day there appeared a typical ulceration on the right side of the throat, the cultures from which contained virulent diphtheria bacilli. From its starting point the membrane spread to the nasopharynx, the other side of the throat, and to the nose, while all attempts to stop it by the use of Behring's serum, as well as

by the best known local applications, were failures. Paralysis of the palate followed four weeks after the beginning of the illness. Lactic acid was efficacious in removing the membrane, which, however, quickly reappeared. Mild gargles, as of salt water, seemed to be of most service. The secretion was tested at numerous times during the continuance of the trouble, and it was invariably found to contain Löffler's bacilli. Clinical evidences of the disease persisted for more than five months.

THERAPEUTIC NOTES.

Treatment of Wounds with an Ointment of Yellow Oxid of Mercury.—MAJEWSKI of Prezemysl has for some time used as a dressing for wounds an ointment containing one part of yellow oxid of mercury and three parts of vaselin. This ointment possesses a very powerful antiseptic action and rapidly stops all purulent processes and promotes granulations. The skin is washed with soap, and then with ether or turpentine. The wound is cleansed with normal salt solution, and if it is deep is filled with corrosive sublimate gauze. Over this is laid a piece of gauze, spread with the oxid ointment, of the exact size of the wound. In this way all danger of intoxication from absorption of the ointment is avoided. The dressing is discontinued after five or six days in order to avoid too great stimulation of the granulating surface.

By the use of this method of treatment, Majewski was able in ten days to sew up an abscess cavity which at the time of incision contained over sixteen ounces of bloody pus. Six days after the suture the stitches were removed, the wound being completely healed. In the beginning of this treatment a patient occasionally developed mercurial eczema, or salivation, or diarrhea, but there were no severe cases of poisoning. These accidents were all due to the fact that the ointment was allowed to come in contact with the skin.

Vibratory Massage in Cardiac Palpitation.—The good effects of rhythmic vibrations upon nerves, muscles, and upon both local and general circulation are well known. Recently BAHR (*La Semaine Méd.*, May 19, 1897) has employed them with success in a case of tachycardia. The patient in question suffered from mitral insufficiency which was well compensated, but produced violent palpitation at times. Bahr saw him in one of these attacks, when the feeling of oppression was intense and the pulse was beating 140 times a minute. By means of the palm of the hand laid flat upon the cardiac region, a series of rhythmic compressions was administered to the thorax. Under the influence of this maneuver, the number of pulsations fell rapidly to sixty-eight per minute and all the subjective symptoms rapidly disappeared.

Treatment of Polyneuritis in Acute Rheumatism.—In the course of acute articular rheumatism patients often complain of spontaneous pains simulating a new joint affection. Examination will show, however, that no signs of inflammation of the joints are present, but that the pain corresponds in its location to some nerve trunk, which is

also sensitive to pressure. In other words, there is a polyneuritis complicating the rheumatism.

For this condition STEINER (*La Presse Méd.*, May 29, 1897) recommends the following prescription:

℞ Salicylate of soda	3 i
Iodid of potash	gr. xii-xxiv
Water	℥ vi.

M. Sig. To be taken in divided doses during the day.

Quinin in Incomplete Abortion.—SCHWAB (*La Semaine Méd.*, April 28, 1897), in incomplete abortion, has seen very good results follow the administration of two doses of quinin, each of eight grains, and taken fifteen minutes apart. Ergot was formerly much used to stimulate uterine contractions, but on account of many unpleasant complications it has been abandoned in abortion. Quinin is equally valuable in stimulating the uterine muscle and does not produce a tetanization, so that there is no danger of retention of the placenta. In fact, Schwab has employed it in severe cases of post-abortive retained placenta, and in every case the placenta was expelled after a period averaging four-hours and a half.

As the use of quinin in this dose (sixteen grains) is absolutely devoid of danger, it seems advisable to employ it in all cases of delayed abortion when there is no especial reason for immediate operation, for if it fails operation can then be resorted to.

Hydrastis Canadensis in Bronchitis.—SAENGER (*Centralbl. f. inn. Medicine*, May 1, 1897) has found hydrastis canadensis an excellent remedy in certain forms of chronic bronchitis. In the beginning of an attack it has little effect, but later, when the mucous expectoration has become mucopurulent in character, the effect of its administration is striking, as it lessens the tendency to cough, loosens the expectoration, and makes the secretion of the bronchial mucous membrane thinner, and changes its character from a purulent or mucopurulent to a mucous one. It also causes most of the physical signs of bronchitis to disappear. The effect of hydrastis is more lasting than that of opium, and its expectorant action is at least as great as that of the expectorants in common use. Senger gives only the fluid extract in doses of from twenty to thirty drops four times daily.

A Resorcin Salve for Acne.—EHRMANN (*Ther. Wochenschr.*, May 9, 1897) recommends in acne, abdominal massage, cascara sagrada, Carlsbad salts, etc., to regulate the intestinal action. For a local application, and one which fulfils the double requirements of preventing the stopping up of the sebaceous follicles and of disinfecting without irritating the skin, he uses a fifteen-per-cent. resorcin salve, which should be made thick, *e. g.*:

℞ Resorcin	3 parts
Lanolin	15 parts
Simple ointment	5 parts.

The salve should be left for fifteen hours on the skin and then be washed off with a mild soap.

After a time the skin peels off, and the treatment with resorcin must be omitted and a simple salve substituted for a few days. Pimples should be incised, and if they are superficial the contents may sometimes be extracted with a mouse-toothed forceps. If too deep for this, or in the

early stages after incision and evacuation of the contents, a drop of twenty-per-cent. solution of carbolic acid in alcohol should be inserted to prevent further development of bacteria.

Treatment of Congenital Hernia in Children with Injections of Chlorid of Zinc.—LANNELONGUE (*Ther. Wochenschr.*, April 25, 1897) has for the past six months made use of a ten-per-cent. solution of chlorid of zinc in order to obliterate the inguinal canal in cases of congenital hernia in children. The technic is very simple. Naturally, aseptic precautions are observed. After the reduction of the hernia an assistant, by the pressure of his finger, closes the communication between the hernial sac and the peritoneal cavity. The operator locates the spermatic cord and holds it with one finger to the outer side. On the inner side, beginning at the upper end of the canal, injections of five or six drops each of the zinc solution are made in four places along the length of the canal. The cord is now slipped to the inner side, and four more injections are made to the outer side of the canal. A compress now takes the place of the assistant's finger, and is held in position with a Spica bandage. The whole procedure occupies only two or three minutes. It is without danger, and thus far has given satisfactory results in Lannelongue's hands.

Milk and Eggs in Typhoid Fever.—In the *Charlotte Medical Journal* for May, 1897, ELY speaks of the dietetic treatment of typhoid fever. He has found no food which he considers preferable to milk, either plain, boiled, peptonized, or with lime water or soda, according to indications. Two quarts a day is the minimum amount given, and no distinction is made between night and day. In some cases an amount of milk which, given every three hours, would be rejected, can be retained if given in divided portions every hour or every half hour, or if need be, every fifteen minutes. Milk may be supplemented by beef juice or eggs. Of the latter he has sometimes given with benefit twenty whole or the whites of forty per day.

Benzoate of Mercury.—The benzoate of mercury is a soluble salt, not only in water, but also in alkaline solutions of a chlorid, or an iodid. The following preparation is the one most employed by GAUCHER:

℞ Benzoate of mercury	gr. 4
Hydrochlorate of cocain }	gr. 1
Chlorid of sodium } aa	
Sterilized water	℥ 1.

For hypodermic use, fifteen minims per day for one week; then two minims per day. The cocain may be omitted without any unpleasant effects, as the pain of injection is not worth considering.

The Proper Temperature of Milk for the Baby.—SMESTER (*La Presse Méd.*, May 22, 1897) has found the temperature of milk as drawn from the breast to be about the same as that of the surface of the body, that is 97° to 98° F. He, therefore, says that the milk in a baby's bottle should not exceed this temperature, and, if anything, should be even a little below this point. He claims to have observed that a baby will take with evident repugnance, milk which is slightly above 97°.

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SATURDAY, AUGUST 7, 1897.

HYDROPHOBIA AND RABIES.

THE time is now upon us when the sun enters the constellation of the Great Dog (*Canis Major*), and is nearly in conjunction with the dog-star Sirius. These days, popularly known as "dog days," have become more or less associated in the public mind with the prevalence of hydrophobia. This idea is so universal, and has been stimulated so much of late by the attention drawn to rabies through the researches of Pasteur and his disciples, that many people regard with horror the approach of a dog during this season, and the entire civilized world is in such a state of nervous excitement in regard to the malady that the slightest scratch upon the skin made by the teeth of a dog, whether he be afflicted with rabies or not, is very apt to cause the person so wounded to present all the characteristic symptoms of hydrophobia.

The sensitiveness of the public to this popular notion, and the harm that it does to both man and beast, have been pointed out in the July issue of *Our Animal Friends* by Mr. John P. Haines, president of the New York Society for the Prevention of Cruelty to Animals. In his commendable efforts to reassure the public, Mr. Haines has rather overdone the mat-

ter. He fails to appreciate entirely the scientific character of Pasteur's researches, and casts a suspicion upon all his work in this field. This is to be deprecated and regretted, for, aside from this, the article is based upon good authority, and is calculated to do much good.

First of all, Mr. Haines points out that hydrophobia¹ is one of the rarest diseases with which humanity is afflicted; that rabies is one of the rarest diseases of the dog, and is no more likely to occur in July or August than in December or January. In confirmation of the former statement, the writer asserts that during the thirty years of the existence of the American S. P. C. A., there has been recorded upon its books no well-established case of rabies, either in dog or man.

The rarity of rabies is confirmed by the best medical authorities. Biggs, in writing upon this subject in Dennis' "System of Surgery," asserts that under all conditions rabies is a comparatively rare disease in man. In New York during the ten years ending 1891, there were only nine deaths reported to the Health Department as being due to rabies. There is no statement as to whether the report was verified or not.

Dercum ("Nervous Diseases by American Authors") says that "hydrophobia is a rare disease in the United States. Dulles, from June 1, 1888, to January 1, 1894, collected seventy-eight cases, an average of fourteen *per annum*. But after investigation, Dulles is said to have pronounced the great majority of these cases utterly incredible and wholly spurious."

Gray ("Nervous Diseases") declares there is not a neurologist in New York City who has seen in his practice more than one case of hydrophobia, and it is well known that Spitzka, Brell, Stockwell, and others, besides those already mentioned, entertain a strong feeling of skepticism regarding the pathologic entity of such a disease.

How then shall we account for the frequent reports of cases of rabies? In the first place every dog which happens to be suffering from any disease whatever during the dog-days is at once set down as "mad." As Mr. Haines says, a frightened dog, cruelly pursued by thoughtless children with the cry of "mad dog," is regarded with terror, and any

¹ It would be well to drop this word from medical nomenclature. Rabies is the same disease in man and dog, and should have the same name. "Hydrophobia" is founded on an entire misconception.

report of a case of rabies, however ill founded it may be, is at once communicated to the newspapers, and through them spreads consternation to hundreds of nervous people.

It must be remembered, as has been said, that rabies in a dog is an extremely rare disease. Probably not one dog in a thousand which is thought to be mad is really afflicted with the malady. It is important that not only the profession but the laity should understand that all dogs perspire excessively through the glands of the mucous membrane of the mouth and tongue during the hot weather. If a dog has been running, this perspiration may even be lapped into froth, and the dog may be said to be "foaming at the mouth." This, however, does not constitute rabies. In rabies, the secretions of these glands become pathologic, and the discharge from the mouth is thick, tenacious, and ropy, and in order to disengage it from his mouth, the dog frequently tears at it with his claws.

In order that some definite scientific data may be obtained for determining the frequency of rabies in dogs, and upon which to base the probability of injuries, received from dogs, developing rabies in man, the New York Board of Health, as was pointed out in a recent issue of *THE NEWS*, has provided for investigation of every case of supposed rabies reported in the city. Arrangement has been made by it through the police department for securing and taking to its laboratory every animal which may be supposed to be suffering from rabies. A thorough investigation will then be made through inoculation of rabbits, guinea-pigs, etc. Such careful research will relieve the victim of a scratch or bite of a dog of the terrifying apprehension which invariably hangs over him till he is assured of the healthfulness of the dog, or guarantee to him proper treatment if it becomes certain that the animal was afflicted with the malady.

The long period of incubation of rabies keeps the nerves of the victim of a dog bite in a state of supreme tension for so long a period that he not infrequently succumbs to nervous exhaustion and experiences all the phenomena of the disease as a case of pseudo-rabies, or lyssophobia.

"A nervous person bitten by a dog, either rabid or supposed to be so, may display within a few months, or even several years afterward, symptoms resembling hydrophobia. There have been instances

published, as lyssophobia, in which seizures have become frequent, and the patient has died exhausted. Dulles has called attention to a number of diseases in which symptoms of hydrophobia may occur, and he has rightly urged a more thorough and systematic examination of patients, and a greater caution in pronouncing upon the irregular symptoms which, in nervous people, are apt to follow the bite of a dog." (Dercum.)

Biggs says numerous cases have been reported in which patients apparently suffering from true rabies suddenly recovered when the animal by which they were bitten appeared before them well, or when they were convinced in some other way that the dog had not been suffering from rabies. When we realize, also, that only fifteen per cent. of the persons wounded by a dog which is known to be rabid suffer from the disease, the probability of infection becomes still less. It is safe, therefore, to accept the conclusions of the lay writer above referred to, when he says:

"Remember these points: (1) There are more than a million of chances to one that any dog which is supposed to be mad is not mad at all. (2) In all probability any dog by which a person may happen to be bitten is not mad; and (3) even if a person is bitten by a dog which really is mad, the danger of hydrophobia is very slight indeed."

ECHOES AND NEWS.

Course of Study Extended.—The Medico-Chirurgical College of Philadelphia has extended its course of study to four years.

An Eighteen-Pound Baby.—A woman at Fishkill Landing, N. Y., has recently given birth to a baby girl weighing eighteen pounds.

Indian Mails Disinfected.—The steamer "Majestic," which recently arrived at the port of New York, carried thirteen bags of mail from Bombay. This will be thoroughly disinfected before it is distributed.

Swallowed Tooth-filling.—At Middletown, N. Y., a man recently swallowed a gold filling which had fallen out of a tooth. The man is now seriously ill with appendicitis as a result, it is claimed, of the accident.

The Jubilee of "Le Scalpel."—This well known medical journal, which is published at Liege, Belgium, and was founded by the late Dr. Festraerts, has recently completed the fiftieth year of its existence.

The Plague and the Vultures.—Since the plague made its appearance in India there has been an enormous increase

in the number of vultures, which devour the bodies of the dead consigned to the "Towers of Silence."

The Murphy Button in Germany.—It would seem that the Murphy button is quite extensively used in Germany. Czerny not long ago reported to the German Surgical Society fifty-five recent cases in which the button was employed.

Consumptives in the Southwest.—It is reported that in El Paso, Texas, there is a growing sentiment against consumptives flocking to the Southwest, and the desire for sanitary measures against the disease is rapidly gaining ground.

Smallpox in Montreal.—It is reported that five cases of smallpox have been discovered in Montreal. The cases are scattered about over the city and cannot be traced to any common origin. Vaccination is being carried on extensively.

British Surgery in America.—Mr. Christopher Heath, late President of the Royal College of Surgeons, England, has accepted the invitation to deliver the second course of Lane Medical Lectures at the Cooper Medical College, San Francisco.

Hospital Salaries Reduced.—It is reported that a twenty-per-cent. reduction in the salaries of many of the employees of Bellevue Hospital was made on August 1st. It is claimed that the appropriation is insufficient to meet present demands.

Sunstrokes in New Orleans.—It is said that a large number of sunstrokes occurred in New Orleans during the June hot wave, and that more than half of the cases proved fatal. This is surprising because, as a rule, sunstroke is rare in that city.

Another Case of Hiccoughs.—In the Cook County Hospital, Chicago, there is a case of hiccoughs which it is feared will prove fatal. The patient is a man, seventy-four years of age, who for ten years has been subject to periodic attacks of hiccough.

Death of Professor Schutzenberger.—The eminent chemist, Professor Schutzenberger, is dead. He was born at Strasburg, and studied medicine there. He became Professor of Chemistry at the College de France in 1876, and was the author of many works on chemistry.

A Pension for M. Henri Dunant.—The Russian branch of the Red Cross Society has granted a pension of a thousand roubles annually to M. Henri Dunant, of Geneva, whose name is well-known in connection with the foundation of that Society, and who is in greatly reduced circumstances.

X-Rays Applied to Mining.—Dr. F. E. Yoakum of Los Angeles, Cal., has applied the X-ray in determining the presence of gold in quartz. He has taken a number of pictures showing gold in ore, the fluoroscope being used for the purpose. It is believed that the discovery will be of use to geologists and mineralogists in prospecting.

Dr. Ohlmacher to Investigate the Etiology of Epilepsy.—Dr. A. P. Ohlmacher of the Cleveland College of Physicians and Surgeons has assumed direction of the pathological laboratory of the Ohio Hospital for Epileptics at Gallipolis in that State, where it is proposed to make investigations bearing upon the etiology and pathology of epilepsy.

Afraid of Appendicitis.—In Wayne County, N. Y., several cases of appendicitis which have occurred there have been attributed to berry seeds. Consequently berries are a drug in the market. Housewives refrain from preserving raspberries and blackberries, and farmers are forced to evaporate their berries or convert them into wine.

A Woman Physician for Mohammedan Women.—Dr. Theodora Krayewska, a Pole by birth, is the first woman appointed to attend Mohammedan women in Bosnia, which is under Austrian rule. The appointment comes under the head of army surgeons, therefore she is obliged to wear a uniform. Her rank is equal to that of a captain, and her salary the same.

Mississippi Valley Medical Association.—The next meeting of this Association will be held at Louisville, Ky., October 5, 6, 7 and 8, 1897. The address on Surgery will be delivered by Dr. J. B. Murphy, of Chicago; the address on Medicine by Dr. John V. Shoemaker, of Philadelphia. The title of papers should be sent to Dr. H. W. Loeb, secretary, St. Louis, Mo.

Delegates to the International Congress.—Sixty Mexican physicians, on their way to the International Medical Congress at Moscow, were booked to sail on the steamship Normannia on July 29th. That vessel was not able to sail on account of a flaw which was discovered in her shaft, and her passengers were transferred to another steamship which sailed on the following day.

Infected Rabbits at Large.—The news comes from Paris that a number of rabbits have been stolen from a hospital where they were being used in the culture of germs of cholera, diphtheria, the plague, and other diseases. It is feared that the rabbits will be sold for food, but the bacteriologists announce that even if the rabbits are eaten there is no danger if their flesh is well cooked.

Johns Hopkins Loses a Part of Its Income.—The news comes from Baltimore that a decision was handed down in the United States Circuit Court by Judge Goff, by which the Johns Hopkins University and other holders of Baltimore and Ohio stock are declared not preferred creditors. If this decision is upheld in the Supreme Court, the University will lose about \$50,000 of its annual income.

Eudoxine.—In the article by Dr. Reynold W. Wilcox, entitled "The Newer Preparations of Bismuth," which appeared in the issue of THE MEDICAL NEWS of July 31st, by a typographical error the preparation chemically known as tetra-iodo-phenol-phthalein was referred to as *endoxine*, instead of eudoxine, a well-known gastro-intestinal anti-

septic placed upon the market in this country by Messrs. Stallman & Fulton.

Typhus Fever at Pekin.—According to the lately issued volume of the Medical Reports of the Imperial Maritime Customs, China, typhus fever is epidemic at Pekin in the spring of each year. The mortality, although considerable, is not so great as that from cholera. The volume also contains an essay upon typhus fever by Dr. Matignon of the French Legation at Pekin, who has made a most careful and thorough study of the disease.

Wears Gloves When He Operates.—Professor J. Mikulicz now wears gloves when he operates, because he believes it is impossible to render the hands perfectly aseptic. The gloves are of cotton and can be washed and boiled and repeatedly used. If the operation is short and aseptic, one pair of gloves is sufficient; if not, he changes them two or three times. His assistants also wear the gloves. The use of rubber gloves by the surgeons of New York and their assistants is a very common practice.

Occupations in America.—According to the bulletin of the Eleventh Census, the total number of people engaged in occupations of all kinds in 1890 was 22,735,661. Females form 17.22 per cent. of this number. Professors and teachers, of whom there are 347,344, form the largest professional class; physicians and surgeons, 104,805, are next in number; then come lawyers, 89,630; clergymen, 88,203; government officials, 79,664; musicians, etc., 62,155; engineers and surveyors, 43,239; artists and art teachers, 22,496; journalists, 21,849, and actors, 9,728.

Reading and Eye-fatigue.—The *Medical Press* points out the fact that the size of the printed characters is a more important factor in the production of visual fatigue than any other, and the conclusion arrived at is that type less than 1.5 millimeters in height should not be employed. The degree of illumination, so far as concerns daylight in fairly lighted rooms, is of much less importance, although deficient illumination, especially when the source is an artificial light, will, under certain circumstances, induce visual fatigue more rapidly even than small type. Whenever artificial light is employed, a white light is said to be preferable to a yellow light, contrary to general opinion.

Hams and Hairs.—A case was recently tried in Birmingham, Eng., to decide whether a ham which was offered for sale as an English ham was really what it was represented to be. A point in the case was that the ham in question bore three hairs growing from a single root, and this was put forward as evidence that the ham must be American. It was shown by the defence, however, that three hairs growing from one root is a characteristic of the Berkshire breed of pigs, although not entirely confined to these. As the "three-hairs" proof was the only evidence offered to show that the ham was American, this was considered too weak a support, and the case was dismissed.

Burned by Roentgen Rays.—An unusual case of burning by the X-rays recently has been reported. A young

woman consulted a dentist on account of pain in the upper jaw. As nothing was found there to explain the symptoms, the trouble was supposed to be in the antrum, and she was advised to have a skiagraph taken in order to clear up the diagnosis. This was done, two exposures being necessary, the first lasting about eight minutes, the second thirteen. There were no signs of any ill effects until two days later, at which time the woman's face began to swell, blisters then appeared on the face, neck, shoulder, and arm, and the hair on that side of the head came out, leaving one half of the scalp perfectly bald.

The Faculty of the Southwestern Medical School.—The faculty, as far as elected, of the newly organized Southwestern Medical School of Texas, is as follows: J. M. Pace, M.D., professor of clinical medicine and diseases of children, and president of the faculty; S. H. Stout, M.D., professor of obstetrics; C. M. Rosser, M.D., professor of theory and practice of medicine; H. K. Leake, M.D., professor of diseases of women; C. H. Sherman, M.D., professor of anatomy; S. E. Milliken, M.D., professor of general and orthopedic surgery; H. L. McLaurin, M.D., professor of materia medica and therapeutics; R. H. Chilton, M.D., professor of ophthalmology and otology; L. Myers Connor, Ph.G., professor of chemistry; Hon. Dudley G. Wooten, lecturer on medical jurisprudence.

Medical Schools in Denver.—The Supreme Court of the State of Colorado has forbidden the University of Colorado from carrying on any part of its Medical Department in Denver, because the constitution locates the University itself at Boulder. In consequence of this, the members of the Faculty resident in Denver have resigned, and the larger portion of them have united with the Medical Department of the University of Denver. Among those who have thus strengthened the Denver Medical School are: Drs. H. T. Pershing in Diseases of the Mind and Nervous System, S. G. Bonney and H. B. Whitney in Medicine, Charles A. Powers in Surgery, Walter A. Jayne in Gynecology, George B. Packard in Orthopedics, L. E. Lemen and J. W. O'Connor in Clinical Surgery, T. E. Taylor in Clinical Obstetrics, and John Chase in Clinical Ophthalmology. The Faculty of the School has been further enlarged by the election of Drs. P. V. Carlin in Obstetrics, W. H. Bergtold and W. B. Fenn in Pathology, and Carroll E. Edson in Therapeutics.

CORRESPONDENCE.

A FURTHER WORD FROM DR. LEFFINGWELL.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In THE MEDICAL NEWS of July 24th I find what purports to be "a reply to Dr. Leffingwell." The privilege of reply by a person unaddressed is rather a matter of favor than right; and the letter you did me the honor to print was intended only for the consideration of my professional brethren, and not for veterinary experts, however eminent in sciences pertaining to agriculture. Your correspondent would imply doubts as to my

acquaintance with our mother-tongue; I shall not question his own evident familiarity with a vigorous vernacular, which has its place,—but that place is not in the consulting-room of medical men. Any formal rejoinder I do not care to make; but one or two points in his letter are so imbued with inaccuracy that I should like to refer to them.

"Is not the British bill sufficiently harassing and destructive to experimental research?" asks your learned correspondent, in a question that insinuates its own reply. I suppose no impression is more widely diffused among medical men in this country than the detrimental effects of the English law: Professor Bowditch of Harvard Medical School stated in his letter to Senator Gallinger that it had "inflicted a serious blow upon English physiology." Is this true? Who should know best—the opponents to all legislation in this country, or the medical men in England who have worked under this law for the last twenty years? I presume the *British Medical Journal* will be taken as a pretty good authority. In an article on "Physiology," which appeared in its issue for June 19, 1897,—not six weeks since—the writer says: "Though we have a Vivisection Act in operation, but few physiologists have had cause to grumble on this score, for the act has been administered by successive Home Secretaries with wisdom and fairness." (p. 1541.) Where is the complaint of serious injury here? But there is other evidence. In a letter I received not long ago from Sir John Eric Erichsen, the eminent surgeon, after stating that vivisections should not be allowed without proper restrictions, he adds: "Experiments on living animals are most carefully restricted in this country. . . . I acted as government inspector for several years, and I can safely assert that the provisions of the act were vigorously enforced, and never to my knowledge contravened." Can it be supposed that if the English law had worked such injury to medical science as some would have us believe, that no reference to such an effect would have been made? Of course the law has been unsatisfactory to some. It has hindered and prevented repetition on English soil of the atrocities which the late Dr. John C. Dalton—a physiologist of no mean repute—tells us that he saw in a veterinary institution on the Continent, than which, he says, "nothing could be more shocking;" it has prevented those abuses of vivisection that the same eminent authority tells us have been done "by reckless, unfeeling, or unskilful persons;" it has hindered the free hand of men referred to by Dr. Theophilus Parvin of Jefferson Medical College in his presidential address before the American Academy of Medicine lately, "who seem, seeking useless knowledge, to be blind to the writhing agony of their victims, and who have been guilty of the most damnable cruelties." I do not know to whom Dr. Parvin alluded when he affirmed that "these criminals are not confined to Germany or France, . . . but may be found in our own country;" but I am sure that wherever they are, they join with your correspondent in affirming that "no one can tell whose method of investigation is right or wrong," and that "research should be free." But there are some of us who believe in vivi-

section for any purpose of good to humanity, but not in vivisection like that which prevails abroad, and which many of us have seen. "After the furtherance of science, the saving of human life is the noblest object we have in view," says a recent writer, referring to vivisection. I cannot but think that it will be a sad day for the human race, if ever that shall become the universal ideal of the medical profession.

Regarding the effect of the proposed legislation at Washington in impeding any phase of useful experimentation, I may say that Senator Gallinger—himself a physician (which your correspondent is not)—denies that the law is capable of the construction or of the effect outlined by its opponents in the Department of Agriculture. Here is a difference of opinion; but as between the veterinarian and the physician—one opposing any law whatever and the other an experienced legislator—I prefer the judgment of the medical man.

May I refer to one point in your courteous reply to my letter in THE MEDICAL NEWS? Legislation, you say, is being urged by persons "who have become excited by reading the antivivisection literature sent them by Dr. Leffingwell," etc. This is a mistake. I have never circulated "antivivisection literature;" nor, since July, 1880,—seventeen years ago,—when my first article in advocacy of State supervision appeared in *Scribner's Magazine*, have I ever written a line antagonistic to vivisection when kept in proper hands and surrounded by adequate restrictions against abuse.

ALBERT LEFFINGWELL, M.D.

BROOKLYN, JULY 27, 1897.

[Dr. Leffingwell's quotation from the *British Medical Journal* is convincing as far as it goes, but the paragraph carries an entirely different impression when read in its entirety, as follows:

"There are at present signs that England will not be far behind Germany, or may even take the lead in the future. The antivivisection movement in this country, with which physiologists have had to grapple, has had some share in retarding the progress of physiology here. To-day, though we have a vivisection act in operation, but few physiologists have had cause to grumble on this score, for the Act has been administered by successive Home Secretaries with wisdom and fairness. To-day, also, we can hardly doubt that the antivivisectionists, though a noisy section, constitute a very small section of the public. The discovery of anesthetics, the jubilee of which is only just over, has robbed experiments on animals of the terrors they formerly possessed." The extreme attitude of the antivivisectionist element was exemplified by a bill which they presented to Parliament, and which, according to a writer in the *British Medical Journal* of the same date, "would probably have completely stopped the carrying out of physiological investigations in England."

This entire discussion in regard to the bill before Congress regulating animal experimentation in the District of Columbia resolves itself into this, namely: No cruelty has been discovered in any of the laboratories of the District;

the present law is sufficient to prevent any cruelty, therefore the enactment of the proposed law is unnecessary.—EDITOR.]

THE ALLEGED MICROSCOPIC POWER OF THE NORMAL EYE.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In the *Medical Record* of January 23, 1897, page 119, Dr. F. L. O. Roehrig of Pasadena, Cal., published an article, entitled "Microscopical Power of the Natural Normal Eye," an article which we should not indifferently allow to pass unnoticed, not because it may "gradually lead to perhaps many as yet wholly unexpected important scientific truths and various valuable new discoveries," but because it is apt to convey confusion and erroneous conceptions of a phenomenon which has been long and well understood.

Dr. Roehrig, when he looked at his mustache at a distance of an inch or two, more or less, saw every hair greatly magnified, just as seen through a microscope. Each hair stood out plainly and distinctly and as though forming a tube, which, according to all appearance, was transparent, rather colorless, hollow, and empty, bounded, as it were, on both sides by a generally well-marked bright white line or border. The size of the magnified hair-tubes varied from that of an ordinary darning-needle to the volume of a small lead-pencil; it increased gradually in proportion as he moved these tubes slowly upward from the chin, and it seemed to reach its maximum when seen nearly high enough to be somewhat on a level with the eye.

The explanation of the phenomenon rests in the fact that the eye cannot accommodate at a smaller distance than that of the near point, which requires the maximum of accommodation. Dr. Roehrig looked at the hairs at a distance of an inch or two, more or less. The near point (*punctum proximum*), *i.e.*, the nearest point of distinct vision, in normal eyes lies, according to Donders, at the age of ten years at 2.8 inches from the eye; at twenty years, 4 inches; at thirty years, 5.7 inches; at forty years, 8.88 inches; at fifty years, 16 inches, etc. Light emanating from each point of an object placed at the distance of the near point, after passing through the pupil, forms a luminous cone with a circular base in front, which will impinge with its apex on the retina, when the eye is in the state of its maximal accommodation, and form a well-defined image of each point, and consequently of the object, so that the object is seen distinctly. If, however, the object is brought nearer to the eye (to a point to which the eye cannot accommodate), the apex of the pencil of rays will fall behind the retina. Then not a single point but a circle of the retina, corresponding to a circular section of the luminous cone, will be illuminated, *i.e.*, a *circle of diffusion*, will result, and the image will become diffused and indistinct. A hair, under these circumstances, will appear as an ill-defined dark stripe. The same may be observed not only if an object is placed nearer to the eye than the near point, but at any distance if we accommodate at a longer or shorter distance than that of the object.

The well-known Scheiner experiment very clearly illus-

trates these conditions. (*Oculus sive Fundamentum Opticum*, Innsbrück, 1619.)

If a pin held vertically toward the luminous sky is fixedly looked at through two small holes in a card not further apart than the diameter of the pupil, and placed horizontally (and *vice versa*), we see the pin distinctly. If now we fixate an object nearer or farther than the pin, the pin appears double. The same can be objectively demonstrated with a convex lens before which is placed an opaque screen with two holes. The rays proceeding from the luminous point through the holes are focused by the lens, and a piece of paper placed at the focusing point will show a well-defined image of the luminous point. If the paper is placed in front of the focus or behind it, it will receive the two small pencils of rays corresponding to each hole separately; each pencil will make its own circle of diffusion and show two images. If we substitute for the lens the refracting media of the eye, and for the piece of paper the retina, it follows that a point of the retina will be illuminated if the retina lies in the plane of the focus of the rays, but two points (*i.e.*, circles of diffusion) if it lies in front or behind the focus of the rays.

An object placed so close to the eye that the eye cannot be accommodated to it may, however, be seen distinctly if we look at it through a small hole in a card. The base of the luminous cone penetrating the eye becomes smaller, and also its sections, that is, the circles of diffusion of the retina. The object thus appears even larger than if observed in circles of diffusion at the same distance without the hole, and becomes still larger if the hole is moved away from the eye. (H. v. Helmholtz, "Handbuch der physiologischen Optik," 2 A., p. 118.)

That the state of refraction does not make any difference, except in degree and with some modifications, will readily be conceived. Therefore, it is erroneous to say, as Dr. Roehrig does, "Those, however, whose visual powers are even in the least degree vitiated by anything anomalous or abnormal, such as myopia, presbyopia, hypermetropia, astigmatism, etc., cannot reasonably be expected to possess or acquire the necessary aptitude for those microscopic perceptions." The law (of faulty accommodation) itself remains unaltered. It is only modified, that is, in astigmatism, by unsymmetrical monochromatic aberrations. The circles of diffusion of a luminous point are changed into stellate figures, the lightest points of which are multiplied images of the luminous point. A luminous line will appear in an astigmatic eye as a light stripe, in which multiple (from two to six or eight) images of the line are recognized. This is generally called *polyopia monocularis*. But even here the condition is that the eye is not accommodated to the object.

The only case in which we might speak of a magnifying (not microscopic) power of the naked eye is in very high degrees of myopia. At a distance for which a normal eye would require a magnifying lens, small objects may be seen by a myopic eye distinctly and, on account of their nearness, magnified.

Another proof that Dr. Roehrig saw the hairs in circles of diffusion is that "one or two of those tubes appeared in beautiful rainbow-like colors." The eye is

not achromatic, but as long as the image is received at the focal distance, or when it is accommodated to the distance of the object, the achromasia is ordinarily hardly noticeable, because the optic media of the eye are in their refrangibility very similar to water, the dispersion of which is much less than that of glass. If, however, the eye is not accommodated to the distance of the object, that is, when the image is formed in front or behind the retina, colored borders appear around the object from chromatic aberration. A pin held before the eye toward the sky will be seen distinctly, with proper accommodation, but if we relax the accommodation or adjust it for a smaller distance, three or more pins are visible parallel to each other, the middle one dark yellowish, and on each side of it one or more of light blue.

C. ZIMMERMANN, M.D.

MILWAUKEE, WIS., July 23, 1897.

OUR VIENNA LETTER.

[From our Special Correspondent.]

THE VIENNA BOARD OF HEALTH AND A FORM OF CONJUNCTIVITIS DUE TO THE DIPLOCOCCUS PNEUMONIE—THE OCCURRENCE OF AN INTRACELLULAR IODIN REACTION IN ACUTE SUPPURATION—THE STATUS LYMPHATICUS AND ITS CONNECTION WITH SUDDEN DEATHS IN NARCOSIS, SLIGHT ACCIDENTS, AND THE INFECTIOUS FEVERS.

VIENNA, July 17, 1897.

A notice recently served by the *Wiener Stadtphysikat* (Vienna Board of Health) on the physicians of the city gives an idea of how they do these things legally over here, and calls attention to a very interesting and only recently differentiated type of conjunctivitis:

"The attention of the board of health has recently been called to an inflammation of the conjunctiva occurring especially in school children. Its cause has been demonstrated by bacterial examination to be the diplococcus pneumoniae (Fränkel-Wexchelbaum). Its symptoms in ordinary cases are moderate catarrh of the mucous membrane, some edema, especially of the upper lids, accompanied by swelling in the semilunar folds and carunculae, with hyperemia of the conjunctiva tarsi, and of the conjunctival folds, a special bluish tint being characteristic of it in this situation. In slight cases, there is not much secretion, though there is a considerable increase of tears. In severer cases, the secretion is plentiful and rather thick and yellowish in color.

"In order to avoid confusion of the above described conjunctivitis with trachoma, and in order to assure the carrying out of the special measures required to prevent the spread of each, you are hereby notified and put legally under obligation in the event of its appearance in your practice to at once report the case to the *Stadtphysikat* in the manner required by law."

This public regulation of contagious eye diseases is all the more interesting, as it has been instituted as a result of sad experience with their ravages when unregulated in various parts of the Empire.

The rôle of the diplococcus pneumoniae is becoming more and more important, as the bacteriologic examination of affected tissues and secretions is being more sys-

tematically carried out. It would seem as though any form of inflammation of mucous or serous membranes may be caused by this almost normal member of the oral flora. Suspicion is becoming almost certainty that, in addition, it is the cause of a number of purulent affections in which the ordinary pyogenic bacteria are not demonstrable.

Some work in Dr. Schnitzler's clinic at the Franz Josef Hospital, the results of which recently appeared in the *Wiener Klinische Wochenschrift*, has attracted a good deal of attention in Vienna, and as it seems to furnish an exact and reliable index of the beginning of suppurative processes, it may prove of special service in surgery. In the matter of appendicitis, an index of the beginning of suppuration, *i.e.*, of some definite reliable sign that the catarrhal process has become a suppurative one, has long been a desideratum. From the observations made, there is claimed to be present at the beginning of acute suppuration a characteristic iodine reaction in the blood. This is not attributable to the presence of the extracellular granules described by Ehrlich, and thought by him to be due to extracellular glycogen, but is an intracellular reaction. Ehrlich's iodine-gum solution is used, and the extracellular granules are found increased in suppurative processes, though the authors do not agree in attributing them to glycogen. Besides this, however, some of the polynuclear neutrophile leucocytes exhibit a characteristic yellowish-to-brownish color. This does not occur in the eosinophiles and only in certain polynuclear cells. It was observed but three times in over 1000 preparations in mononuclear cells.

This intracellular iodine reaction occurs only in acute suppuration and disappears twenty-four hours after an abscess has been evacuated. Where an inflammatory infiltrate does not become purulent, but goes on to resorption, it does not occur. Its appearance seems to coincide very closely with the occurrence of suppuration. The intensity of this iodine reaction is dependent upon the course and progress of the suppurative process. The more rapid the purulent degeneration and the more invasive it is, the more intense is the intracellular reaction to the iodine solution. Where a stationary abscess exists, *i.e.*, one where the purulent invasion of tissue is at an end, and nature has walled off the infecting material, the reaction does not occur unless for some reason the natural resistance is weakened and infective invasion once more begins. The subject is not an entirely new one experimentally, and besides Ehrlich, Czerny, and others have noted the phenomena in question, or very similar ones, though not with the definiteness of the present observers.

The status lymphaticus—the lymphatic diathesis I suppose we would call it in English if that term has not been already pre-empted for something quite different—is attracting a good deal of attention here from clinicians and pathologists. The subject was first brought into prominence by the observations of Professor Paltauf, the medico-legal specialist. He noted, in a number of cases of sudden deaths from slight causes in comparatively young people, that there was present a hypertrophy of the

lymphatic tissues," especially such as were connected with mucous membranes all over the body. The tonsils were hypertrophied, the lymph-follicles at the base of the tongue enlarged, abnormal adenoid tissues were present in the pharynx, and all along the intestine the lymph-follicles were increased in size and number. With this, there was a dilated heart not dependent on valvular lesions. In addition, there was often present a hyperplasia of the vascular system, a congenitally narrow aorta with small peripheral vessels.

It was noted in a number of cases of death during chloroform narcosis that these conditions were present. People so constituted seemed to stand slight, sudden shocks very badly. A plunge into cold water, for instance, was sometimes followed by fatal collapse. Unaccountable drowning accidents found their best explanation at *post-mortem* in the presence of this peculiar diathesis.

The condition was observed with extreme rarity in autopsies on the middle-aged or older persons. Vital resistance seemed to be so lowered that this diathesis is almost inconsistent with longevity. It was noted that many of the young patients who succumbed unaccountably to attacks of the infectious fevers which seemed comparatively light—influenza, for instance, of typhoid or of pneumonia, had this generalized lymphatic hypertrophy.

The clinicians took the matter up at this point, and the prognosis of the infectious fevers begins to be considered a doubtful matter where lymphatic hypertrophy on the visible mucous membranes is observed. When this is accompanied by small peripheral blood-vessels, the prognosis is very guarded. The recalcitrant and relapsing cases of chlorosis are often associated with this condition. In many of the cases there is evidently great delicacy of constitution; development has been slow and incomplete, the genitals may be hyperplastic, hair and other epidermic structures may be incompletely developed. In many cases, however, none of these developmental retardations or anomalies is present. In fact, the individual may be strong, well developed, normally built, and without any external sign of a pathologic diathesis. A case which came up for autopsy not long ago, after a sudden death in chloroform narcosis, occurred in a perfectly healthy-looking man of twenty-eight, 5 feet 8 inches in height, weighing 155 pounds, with no physical anomalies. There was nothing but the widespread lymphatic hypertrophy, the dilated heart, and perhaps some slight vascular hypoplasia to account for the death.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

SUCCESSFUL LIGATION OF THE SUBCLAVIAN ARTERY—MUSICAL MITRAL MURMURS IN CONNECTION WITH AORTIC STENOSIS—THE VALUE OF EXPLORATORY LAPAROTOMY *per se* IN REAL AND SUPPOSED MALIGNANT DISEASE OF THE ABDOMINAL ORGANS—THE MORE EXTENDED USE OF ERGOT IN OBSTETRICS—A CLOT IN THE MITRAL ORIFICE PRODUCES SYMPTOMS OF STENOSIS—PARTURITION ACCOMPLISHED DURING PARAPLEGIA.

At a meeting of the Royal Medical and Chirurgical

Society, held May 26th, CLUTTON reported a case of *subclavian aneurism successfully treated by ligation*. The first part of the artery was twice ligated, the aneurism being in the third portion. A few days later a distal ligature was also applied to the first part of the axillary artery. The first ligature was one of gold-beater's skin. After six weeks the radial pulse had returned, presumably as a result of the absorption of the ligatures. The artery was then tied with floss silk. One week later the radial again was pulsating. The axillary artery then was tied, also with floss silk, which caused all pulsation in the aneurism itself to cease, and the dilated vessel gradually shrunk. Care was taken in applying the ligatures to the subclavian artery not to rupture the internal coat. If this takes place, there is danger that the vessel may give way or that a new aneurism may be formed at the site of the ligature.

Clutton also described a case of pharyngeal abscess followed by hemorrhage, and treated by ligation of the carotid arteries on one side. The trouble began with sore throat, followed by an abscess in the pharynx above the right tonsil, which extended into the tissues of the neck. There was considerable bleeding from the abscess cavity, which increased in spite of gauze packing. Accordingly, the bifurcation of the common carotid artery was exposed and the main trunk and both of its branches ligated. The patient made a rapid recovery. Experiments upon animals, as well as clinical data, show the necessity of ligation of both the internal and external carotids in such cases, and as the common carotid can be tied through the same incision, it does not complicate the operation.

At the meeting held June 8th, DICKINSON read a paper upon *musical mitral murmurs in connection with aortic stenosis*, based upon the examination of four cases. In one there was during life much evidence of intraventricular tension and an intense apical systolic murmur which had a musical tone. After death the aortic orifice was found to be almost completely closed, while the mitral valve was practically normal. The musical murmur was attributed to the overdistention of the ventricle, due to the obstruction of the aortic exit and the consequent leakage of the mitral valve under the abnormally high pressure.

In a second case, one of aortic disease of long standing, a murmur developed indicative of mitral regurgitation, with a squeak like that of a mouse. The left ventricle was found to be greatly hypertrophied, and both the mitral and aortic orifices were contracted and thickened. The other two cases were similar to this one. In every instance the musical murmur was attributed to the occurrence of mitral regurgitation in small volume and at a high pressure, the result of ventricular hypertrophy and obstruction.

At a meeting of the British Gynecological Society, held May 13th, SNOW read a paper upon *the value of exploratory laparotomy per se in real and supposed malignant disease of the abdominal organs*. The beneficial results which follow the opening of the abdominal cavity in tuberculosis are well known. In malignant troubles the resulting benefit has been overlooked through the

common practice of sending the patient home as incurable as soon as the wound has healed.

A woman, aged fifty-three, had a rapidly-advancing, very vascular deposit in the omentum, secondary to scirrhous of the breast. After incision the advance was materially checked, the mass diminished in size, there was no ascitic trouble, and the woman lived eighteen months. In a man aged fifty-eight years, with extensive deposit of carcinoma along the whole posterior surface and most of the greater curvature of the stomach, great improvement took place after incision, but the patient was soon lost from observation. An exploratory incision was made into a large sarcomatous mass, infiltrating both recti, of a man aged sixty-four. The growth diminished in size, and eleven months later there had been no bad symptoms, and the patient worked regularly as a sawyer.

ROBSON said that he had operated upon cases in which, upon opening the abdomen, he believed that he had to deal with ineradicable malignant disease, and had closed the abdomen without further procedure, yet the patient had quite recovered. Increased experience will, he thought, show that many of these conditions are not malignant.

On April 13th, MADDEN read a paper on *the larger use of ergot in obstetrics* before the Section on Obstetrics of the Royal Academy of Medicine in Ireland. By the teachings of some recent authorities, a trend of modern opinion has become established distinctly unfavorable to the general use of ergot during labor. The dangers ascribed to its use during labor are: (1) Its possible feticidal effects; (2) the probability of its giving rise to such irregular uterine action as will favor the retention of the placenta, and (3) the direct toxic effects of the drug upon the maternal organism. The first of these reasons has long since been disposed of by Denham and more recently by the experience of Atthill.

As to the second and third reasons, Madden quoted from his personal experience in 150 obstetric cases in which ergot was used. In 148 cases the maternal result was favorable. In 1 case the mother died from septicemia and in 1 from typhoid fever. In 95 cases the drug was given before the birth of the child. In 92 of these instances the children were delivered alive, either with or without forceps. Of the 3 who were still-born, 2 were found to be putrid, having been a long time dead. In 86 of these 95 cases the placenta was normally expelled. In the remaining 9 assistance was necessary four times on account of morbid adhesions, four times for uterine inertia, and once on account of hour-glass contraction.

Madden concludes that many of the evil effects ascribed to ergot are the result of its misuse. Under no circumstances should it be given during labor until the os uteri is fully dilated or fully dilatable. When given after delivery it checks hemorrhage, produces permanent contraction, and by sealing up the uterine vessels the liability to bacteriologic invasion is lessened. In the majority of multiparous patients it may be administered during the puerperal period with the object of stimulating the muscular tonicity and accelerating the process by which it returns to a normal condition.

EWART and ROLLESTON gave the details of *an autopsy at which the left side of the heart had been found to contain a large clot, plainly ante-mortem*, and which was attached to the left wall of the left auricle, and passed through the mitral valve into the ventricle. The valve was normal. The patient, a woman aged forty-three, after recovery from an attack thought to be pleuropneumonia, developed the symptoms of mitral stenosis, with failure of compensation. At first there was noticed a slight systolic murmur with a snappy first sound. Later a presystolic murmur developed. The thrombus was old internally, a recent clot having been added to it. The viscera showed the changes met with in cases of advanced mitral disease.

ROUTH, at a meeting of the Obstetrical Society, held June 2d, read a paper on *parturition during paraplegia*. A multipara with complete paraplegia below the level of the sixth dorsal vertebra, of traumatic origin, was admitted into the hospital half an hour after the accident. She was at the time nearly seven-months' pregnant. Two months later—that is 261 days after the last menstruation, labor came on without the patient feeling any pain. The first stage lasted ten hours, and the second $2\frac{1}{4}$ hours. The only sensation during a "pain" was a tight feeling at the epigastrium, inclining her to hold her breath. As the head was passing the vulva, the patient cried out—apparently a reflex act. Routh concludes that the act of parturition is partly automatic, partly reflex, and that direct communication between the uterus and the lumbar enlargement of the cord through the medium of the sympathetic nerve is probably essential to the regular and co-ordinate contraction and retraction of the uterus as occurring in normal labor. It also seems probable that the uterus is able automatically to expel its contents even when completely separated from the spinal cord, but such expulsion would be irregularly or imperfectly carried out.

At a meeting of the Epidemiological Society, held May 21st, DAVIDSON read a paper on the *seasonal fluctuations of epidemic diseases*, which recur constantly in every country, but vary in different climates and seasons. In seeking the causes of these variations, a distinction must be made between diseases like cholera, malaria, enteric fever, etc., which are due to the action of microbes existing in the soil, and diseases such as smallpox and measles, for the latter can be influenced only indirectly by meteorologic conditions, as these may affect the individual. Why epidemics occur usually in winter and spring, it is not easy to say. In Europe, India, and America, smallpox approximately follows the temperature curve, though it begins to rise in winter when the temperature falls, but attains its maximum during the spring. The regular appearance of smallpox during the winter has been ascribed by Fluegge to the aggregation of persons indoors, the less frequent change of clothing, and neglect of bathing; but this will not explain the occurrence of the same general curve in India, where the domestic habits do not conform to those of Europe. During 1868, smallpox was prevalent in Madagascar, with a temperature ranging between 90° and 100° F., while during the winter of 1870 in the Hudson Bay Territory an epidemic was not checked in the least by a daily temperature of 4° below zero. Weather

conditions which tend to produce catarrh of the pharyngeal and respiratory mucous membranes will, of course, increase the number of cases of measles, scarlet fever, and diphtheria by lessening the power of resistance of that part of the body by which the microbic cause of these diseases enters the organism. Similarly, catarrh of the intestine favors the development of cholera and typhoid fever.

RANSOME agreed with the reader as to the influence of catarrhal affections favoring infection, but he has also observed that seventy per cent. of the outbreaks of scarlet fever are preceded by a fall of the barometer, thus suggesting the sudden escape of the poison with the ascent of sewer- or infected ground-air.

Berlin.

PURPURA FULMINANS, OR ERYTHEMA EXUDATIVUM MULTIFORME—PASSAGE OF ESOPHAGEAL BOUGIES WITH THE AID OF THE ESOPHAGOSCOPE—A CASE OF HODGKIN'S DISEASE RESULTING FROM A BLOW ON THE SHOULDER.

At a session of the Medical Society, held May 12th, GEORGES presented a boy, aged two years, in whose case he had made a diagnosis of *purpura fulminans*. The child never had had any infectious disease, and, except for slight symptoms of rickets, appeared perfectly healthy until he was suddenly taken ill with obstipation, vomiting, and high fever. Some powders, probably of calomel, were administered, and a green diarrhea resulted. Eight days later the fever had disappeared and the boy was entirely well. Two weeks afterward the mother noticed a few red flecks on the buttocks. The next morning there was vomiting of blood, the appearance of a large blue-red spot on the calf, and a swelling of the opposite foot. On the following morning, the third day of the disease, there were several bloody dejections, and the ears, cheeks, hands, feet, and backs of both thighs and buttocks were swollen and the seat of numerous ecchymoses and bullæ, from the size of a pin-head to that of a silver mark piece. The scrotum was swollen and of a deep red color. The internal organs presented no lesions. Examination of the blood and urine showed nothing abnormal. There was elevation of temperature up to 103.5° F.

The case was remarkable on account of the rapidity with which the hemorrhages occurred. The treatment consisted of rest in bed, a proper diet, and the administration of iodid of potash.

LASSAR looked upon the case as one of acute erythema febrile bullosum rheumaticum, the disturbance of the digestive tract and the pains with which such cases are often affected pointing to the relation to gastrorheumatic troubles. Under these circumstances he gives as large doses of salicylate of soda as the age and condition of the patient will warrant.

HEUBNER said that all the cases for which Henoch had proposed the name purpura fulminans had ended fatally. Such a case, however, he never had had the good fortune to see. Further, the occurrence of bullæ was not in accord with the classic picture of that affection. The diagnosis of erythema exudativum multiforme was, in his opinion, the correct one.

JACUSIEL reported the following interesting and un-

usual case: A young man, aged twenty, was struck on the shoulder by a board. Soon after there developed at the site of the injury a tumor, which grew for four years without symptoms. Then in the neighborhood of the tumor, in the neck and around the scapula, there were found a number of enlarged glands. The case progressed unfavorably in spite of a long-continued treatment with arsenic, the liver and spleen became much enlarged, ascites set in, and death followed—eight years after the injury was received. A complete autopsy was not permitted, but examination of the tumors showed them to have no characteristic structure, giant cells being found only in two preparations. A probable diagnosis of Hodgkin's disease was made, which, it was admitted, was only a cloak for inability to arrive at a proper solution of the malady.

VIRCHOW, who had examined the tumors microscopically, said that an exact diagnosis was impossible, but that the glands presented the appearance of malignant glandular sarcoma (lymphosarcoma), or, as commonly called, Hodgkin's disease.

ROSENHEIM has been able to pass a sound with the aid of the esophagoscope in the case of two patients suffering from stricture of the esophagus, although without this instrument he repeatedly failed in the attempt. In both patients the stricture was at a distance of twenty-eight centimeters (eleven inches) from the teeth. The cause of constriction in one instance was a carcinoma, and in the other it was the scar following the swallowing of a strong alkali. In the first-named case relief was naturally only temporary; in the latter an opening which at first would admit only the finest probe, and which was found only with the greatest difficulty even with the esophagoscope, was so far dilated by treatment as to permit the patient to swallow food of the consistency of oatmeal without difficulty, while a seven-millimeter bougie could be easily passed.

SOCIETY PROCEEDINGS.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting, Held Wednesday, April 21, 1897.

L. DUNCAN BULKLEY, M.D., President *pro tem.*, in the Chair.

DR. S. H. DESSAU reported a case of diphtheria in which brilliant results were obtained by the use of antitoxin. The patient was a child between two and a half and three years old who was brought to the West Side Dispensary. There was very difficult, harsh breathing of a croupy character, and the case was diagnosticated as laryngitis by his assistant. The speaker saw the child a day later, and examination revealed the fact that the tonsils and a portion of the soft palate and lower posterior pharynx were covered with a grayish exudate. It was decided to employ antitoxin, although the prognosis was exceedingly bad. The Board of Health preparation was given, five cubic centimeters, representing 2500 units, being injected. The child immediately began to improve and is now convalescent.

DR. J. RIDDLE GOFFE spoke of the value of combined operations in saving time and nervous wear and tear to the patient, and reported the history of a case in which he first curetted the uterus and packed it, and then shortened the round ligaments by the following new method: An incision was made in the anterior vaginal fornix through which the uterus was delivered, and the round ligaments were then caught up and shortened by being folded upon themselves and stitched together. The uterus was then replaced and an operation for repair of the lacerated perineum performed, after which the patient was turned upon the left side, an incision made through which a floating kidney was found, brought up, and stitched in the wound. The patient rallied well, although she was pale, anemic, and in a wretched condition before the operation. The entire procedure lasted an hour and three-quarters, and the anesthetic used was chloroform, about three ounces being given.

DR. R. A. MURRAY believed the principle a correct one, and thought it advisable to combine such operations whenever one did not preclude another, as, for instance, an operation for repair of the perineum when drainage *per vaginam* is to be employed, in which case good union of the perineum cannot be obtained.

DR. WILLIAM STEVENS said he had recently had the misfortune to see a man die from the effects of chloroform. About half an ounce of the anesthetic had been administered, when the man threw back his head and expired in less than five minutes, although half a dozen doctors tried to resuscitate him. The man had been somewhat intemperate in the use of alcohol, and possibly there was some carelessness in administering the chloroform.

DR. A. M. JACOBUS thought the danger in chloroform anesthesia lies in the fact that too much of it is given in the beginning. Instead of commencing with a few drops, as much as half a teaspoonful is often poured on the mask. In the case mentioned death was probably due to sudden paralysis of the heart.

Dr. Jacobus then reported a case of belladonna poisoning caused by wearing a belladonna plaster. The patient was a woman for whom he had prescribed fluid extract of hydrastis for metrorrhagia at the Presbyterian Hospital Dispensary, the drug being put up for her at the dispensary drug department. After taking two or three doses of it she began to feel and act queerly. She therefore took the bottle to a drug-store, where the clerk told her it contained laudanum. She immediately hurried to the speaker's office in a terrible state of excitement. Her face was flushed, the pupils widely dilated, the throat dry, she complained of numbness, and was dazed and unable to talk connectedly. The symptoms all pointed to belladonna poisoning, but no connected history could be obtained. The medicine, which she had with her, was found to be fluid extract of hydrastis, and the speaker was at a loss to account for the symptoms until, upon stripping her, he discovered that she was wearing a belladonna plaster. She began to improve when this was removed, and was soon entirely well.

DR. S. H. DESSAU said that hydrastis might easily be

mistaken for laudanum, as the odor is quite similar, but thought such an error on the part of the drug-clerk was unpardonable. The yellow staining of the fingers by hydrastis at once makes clear the difference, and, moreover, its physiologic effects are entirely unlike those of opium. The symptoms complained of by the woman were more like those following a very large dose of quinin.

DR. MURRAY said he was very careful in prescribing belladonna, and always told the patient the nature of the drug, for he had seen several cases of poisoning from its use. He expressed the opinion that some people, especially children, show an idiosyncrasy in regard to belladonna.

DR. JOSEPH COLLINS said it seemed to him that children are very tolerant of belladonna, and that he has often given a dose to a child which would produce unpleasant symptoms in an adult.

DR. J. H. FRUITNIGHT reported an interesting case in which there was loss of motion and sensation in both extremities. The patient was a woman, sixty years of age, who had always been perfectly well up to the time of the attack. On attempting to rise one morning she found that there was a total loss of motion and sensation in the lower extremities. There were no symptoms referable to the central nervous system, and no cause could be found for the paraplegia except the fact that she had not passed much urine. Upon passing the catheter, only a small amount of urine was found in the bladder. Diaphoretics were administered, and a considerable quantity of urine was voided, which was found to contain granular, epithelial, and hyalin casts, albumin, and some pus-cells. Improvement soon followed, and the patient is now able to walk about. With such a result, the speaker thought it seemed improbable that there was any cerebral lesion, and considered the paraplegia due to uremic poisoning caused by suppression of urine.

DR. COLLINS thought the case neither strictly organic nor functional. The lesion was probably a spasm of the blood-vessels in the cord which prevented transference from both above and below, such a condition being quite possible. He doubted whether there was complete sensory paralysis, for, as he understood it, the patient had first tested herself in this regard. Unless both tactile and pain sensation were tested, he thought the case one of motor paraplegia due to uremic poisoning.

DR. COLLINS reported two cases which he had recently seen with Dr. Brewer. The first was that of a man who had an ordinary suppurative cellulitis of the posterolateral portion of the neck which was incised. The patient was apparently doing well when he began to develop symptoms of what was supposed to be cerebral abscess. There was a temperature of 102° F., the pulse was rapid, and the mental condition was impaired. There was no stiffness of the neck and no reflexes. The man died shortly afterward, and at the autopsy an extensive cerebrosplinal meningitis was discovered.

The second case was that of an old woman, from whom a tumor of the breast has been removed. The wound remained open and was filled with large granulations, and

there was a condition of general sepsis present. She developed stiffness of the face and one side of the tongue, then of one side of the body and then of the other, and a slight arching of the back. There were no symptoms of hysteria. The case was at first supposed to be one of meningitis, but it was noticed that the stiffness disappeared under manipulation, and it seemed probable that it was a toxic manifestation. She was given calomel and Carlsbad salts and a cold douche, with the result that she recovered.

TYPES OF INFLUENZA IN 1896-97

was the subject for the evening's discussion.

DR. ROBERT MILBANK said that he had seen many cases of gripe during the past winter, but had met with fewer cases of pneumonia and serious affection of the respiratory organs than ever before. The cases which struck him most forcibly were those which were accompanied or followed by intercostal rheumatism. He had seen a number of cases complicated by throat trouble, such as suppurative tonsillitis.

DR. RICHARD KALISH said that his experience with gripe was limited to those cases in which there was some eye or ear complication. He had seen few cases in which there was any ear involvement, but had treated many for catarrhal conjunctivitis which developed during convalescence and was usually of short duration.

DR. J. BLAKE WHITE said that whereas some years back the respiratory organs seemed to be the ones most affected by gripe, his experience during the past year went to show that the digestive organs suffered most. He had seen few cases of pneumonia, but quite a number in which there were throat complications. He had found bromoladin especially useful in relieving the irritation of the throat in these cases. Opiates he had found not so useful as subnitrate or subgallate of bismuth, together with resorcin; he prefers carbonate of ammonia with salicylate of soda.

DR. DESSAU spoke of the disease in children and thought the type had changed during the last few years. Formerly there were many violent symptoms, such as high fever, delirium, convulsions, and semi-coma, accompanied by pneumonia, pleurisy, etc., while of late the symptoms have been of a much milder type, and in many cases have been attributed to catarrh or some form of digestive disturbance, until the persistence of the attack excited suspicion, and the successful results following a specific form of treatment revealed the true nature of the disease. The principal feature of the mild form of influenza in young children is a teasing cough, worse at night, occurring in paroxysms at times, with but little expectoration, accompanied by a few râles of the dry, subcrepitant variety. In the majority of the cases observed by the speaker there was no marked involvement of the nasopharynx, although there was a mild pharyngitis. In this connection he referred to concealed forms of diphtheria located in the nasopharynx. A differential diagnosis can be made by rhinoscopic examination and from the appearance of the secretion. In diphtheria it is thin, viscid, and seems to run down the posterior wall in a stream; in influenza the discharge is almost green in color and quite

thick, showing itself below the soft palate in lumps. In treating influenza he has used with great success a one-per-cent. solution of carbolic acid, with a little glycerin added.

DR. FRUITNIGHT was of the opinion that the type of the disease had been less severe during the past year, and that it would continue to diminish in the course of time, and would eventually disappear. He had seen but little pneumonia, the most common complications being nose, throat, and middle ear diseases, which, however, yielded rapidly to treatment. He had seen little of the neurotic form of the disease which was so common in the first epidemic, but had been struck by the frequent occurrence of neuralgia, especially of the frontal sinuses, in these cases. In his experience children had not been so generally affected as old people.

DR. MURRAY said that in every case he had seen the frontal headache was an important feature. Nose, throat, and ear complications were also common. He is in the habit of giving the patient calomel, and then prescribes phenacetin and codein to relieve the headache. The intense prostration which follows the disease demands tonics.

DR. A. E. BIESER, present by invitation, said that, clinically, the disease appeared in four types, affecting respectively the respiratory, the circulatory, the nervous, and the gastro-intestinal systems. Of late years the disease has been of a milder character than that which was seen in 1891, and the cardiac failure, which was then so common, is now rarely seen. He expressed the opinion that much of the heart failure in gripe is due to the use of coal-tar preparations, and said that at one time when the supply of phenacetin had given out many druggists substituted acetanilid. He, therefore, did not employ the coal-tar preparations in the treatment of influenza, but replied upon whisky, quinin, and tonics. If it were necessary to treat individually the symptom *pain*, he would prescribe opium.

DR. JOHN F. ERDMANN presented a specimen of ruptured tubal pregnancy taken from a patient from whom, fourteen months before, he had removed the opposite tube for a similar condition. The woman, who was twenty-six years of age, was in collapse when first seen, with symptoms of concealed hemorrhage, pulse 144 to 148, respirations rapid and shallow, rupture evidently having occurred some days before. The abdomen was opened and the ruptured tube removed. During the operation six pints of normal salt solution were injected. The patient was making a good recovery.

DR. ERDMANN also exhibited a specimen showing sarcoma of the testicle, which was removed from a man thirty-five years of age in whom there was no family history of malignant disease, and no specific history. Some years ago he had a hernia. When first seen a tumor of the left testicle, about the size of an egg, was found. It was not translucent. Two weeks later the tumor had greatly increased in size, some fluctuation was noticed, and the case was thought to be one of hydrocele, although the rapid growth pointed to sarcoma of the testicle. Operation was advised and the growth removed. A

hydrocele containing about four ounces of fluid was found in the lower part of the tumor, which was evidently sarcomatous, although no microscopic examination had as yet been made.

NEW YORK ACADEMY OF MEDICINE—SECTION ON ORTHOPEDIC SURGERY.

Stated Meeting, Held May 21, 1897.

A. B. JUDSON, M.D., in the Chair.

DISLOCATION OF THE PERONEUS LONGUS AND PERONEUS BREVIS.

DR. W. R. TOWNSEND presented a young man, twenty years of age, whose peroneal tendons were easily dislocated to the front of the malleolus. The right foot had been affected in this way for many years, the left only during the past seven months. On walking and on rising from a chair the tendons would slip over the malleolus and cause considerable disability until they were replaced by the hand. The boy did not have much pain, but was easily fatigued. Dr. Townsend briefly reviewed the literature of the subject. Dr. L. A. Sayre reported a case in 1870. In 1876, Dr. Beach of Boston reported eighteen cases, including one of his own. Gillet de Grandcourt reported ten cases in 1878. Treves said it is caused by sudden and violent contraction of the muscles when the limb is in such a position as to favor displacement, that it may be treated by means of pads and pressure, and that in some cases it is advisable to replace the tendons and retain them by suturing the torn edges of the sheath.

DR. R. WHITMAN suggested deepening the channel, replacing the tendons in the groove in the bone and giving them a new covering of periosteum or fibrous tissue. This might be possible without removing the sheath.

DR. A. B. JUDSON said that the peronei are comparatively small and unimportant muscles. To a slight degree they assist the muscles of the calf to extend the foot on the leg. Aside from this their function is to evert the sole of the foot, and this function is not seriously impaired by displacement of the tendons to the front of the malleolus. He thought that the patient would derive no benefit from an operation, and that practically no treatment was necessary.

DR. WHITMAN said that the discomfort caused by the slipping of the tendons must be considerable, and that the boy would be better off if this could be stopped.

DR. TOWNSEND said that the patient had recognized the disability and had sought advice on account of it. He thought an attempt should be made to prevent the slipping of the tendons by the application of pads and pressure before an operation was decided upon.

A CASE OF TRAUMATIC SPINE, WITH RECTAL AND VESICAL PARALYSIS.

DR. J. P. FISKE presented a patient, a man thirty-three years of age, who had been under treatment during fourteen months, and under observation thirty-four months, from the time of the injury. When first seen he was in a condition of complete helplessness. He could not move in bed, and if turned or moved by his attend-

ants he suffered the greatest pain. Urine was constantly flowing, and he was not conscious of the passage of feces. Recovery had been complete, with control of the sphincters. He was now walking without assistance and had returned to his work. The accident had been attended by great violence. While working as a harness-maker the flooring gave way under him as he was carrying a heavy load and his right leg went through a hole. The spine was forcibly flexed and he became unconscious. The twentieth day after the injury, rigidity of the spine and muscular spasm were marked. There were complete paralysis from the waist down, as regards voluntary motion, incontinence of urine and feces, and pain in the dorsolumbar region, aggravated by the slightest motion. Crepitus and spinal deformity were absent. The diagnosis was severe traumatism of the spine, concussion of the cord, more or less complete rupture of the ligaments, and, possibly, partial dislocation of one of the lumbar vertebræ, with spontaneous reduction. He was at once encased in plaster-of-Paris from the axillæ down to and including the pelvis, with immediate and considerable relief.

The plaster jacket was renewed when necessary and was worn day and night during ten months. This treatment, with massage, frequent change of position, alcohol baths, and such medication as was required in his poor general condition and for the vesical symptoms, was attended by gradual recovery. There were no bedsores. At the end of four months he sat up in bed and was lifted into a steamer-chair. After seven months he had regained control of his rectum and could walk a short distance with the aid of crutches. From this time his recovery was more rapid. The incontinence of urine persisted longer than the other symptoms, but ceased after a time, and during the past twelve months he had been perfectly well. This case clearly shows the immediate and permanent relief which follows absolute fixation after severe spinal injury. Patients treated without persistent fixation are likely to be constantly troubled with pain in the back and legs, and to present the symptoms of railway spine. Dr. Fiske added that these cases are often considered hopeless. He had presented the patient as an example of what continued fixation and supporting treatment would accomplish.

AN ISCHIATIC CRUTCH USED IN PLACE OF AN ARTIFICIAL LIMB.

DR. A. B. JUDSON presented a boy nine years of age, who was wearing an ischiatic crutch instead of axillary crutches or an artificial limb. Amputation had been performed below the knee after a railroad accident. The case illustrated the comfort and ability which this apparatus was able to secure in the treatment of those affections of the lower extremity which require that the weight of the body be removed from the affected limb. This use of the skeleton of the pelvis is not new. Ischiatic support is a feature of Dr. Fayette Taylor's hip-splint, described in 1867. In fact, the long hip-splint is an ischiatic crutch with the added function of traction. In the instrument shown the crutch consisted of an upright steel piece,

adjustable in length to meet the growth of the patient, with an india-rubber crutch tip at the foot and a semi-circular pelvic band, carrying a single perineal strap. It also had a shoulder strap which transferred the weight of the splint to the opposite shoulder, a steel knee-piece restraining the limb anteroposteriorly, and a webbing strap above the knee. There was no customary leather strap surrounding the splint and the ankle because the lower part of the leg was absent. Although the stump was flexed in walking, there was no possibility of ankylosis interfering with the subsequent use of an artificial leg, because the knee was free from inflammation, which necessarily preceded ankylosis. The apparatus was easily provided with a joint at the level of the knee, and this is desirable in convalescent hip disease, if the limb is so long as to be inconvenient if constantly extended.

OSTEOTOMY FOR INVERSION IN CLUB-FOOT.

DR. TOWNSEND, at the request of Dr. V. P. Gibney, presented a girl, five years of age, whose feet had been treated by Phelps' operation, by braces, and by building up the outer side of her shoes. On February 16, 1897, to correct inversion, subcutaneous osteotomy of both tibiæ had been performed, and also right achillotomy. The lower fragments of the tibia were rotated outward and the limbs put in plaster-of-Paris. The inversion had been entirely corrected. Mr. R. L. Swan of Dublin, who had described this operation, after an experience in the treatment of twenty patients with good results, had said that rotation of the limb as the result of equinovarus, and which persists after the latter is corrected, is due to trouble below the knee; that when these patients walk and attempt to toe out they throw the entire limb out by rotation of the thigh, and the gait is awkward. The toeing in is due to the fact that the entire leg is rotated inward and the external malleolus is too far forward. To overcome this, he divides the tibiæ only, rotating and bringing the lower fragment outward, thus placing the internal malleolus further forward, as regards its relation with the external malleolus.

DR. JUDSON said that, for the prevention of inversion, he relied on the thorough correction of the equinovarus. If this is done, the child avoids toeing in, either unconsciously, or, later, from pride.

DR. WHITMAN said that division of the bones of the leg is a very old operation for the correction of the intoeing of club-foot.

DR. TOWNSEND said that Mr. Swan divides only the tibia and is very careful not to divide the fibula.

DR. TAYLOR had noticed that the feet in the case shown had not been fully corrected before the operation. The child walked very well now and the result was very good, but it seemed uncertain that this condition would prove permanent. He believed that the persistence of inversion in many of these patients is due to incomplete correction of the deformity.

CALCANEVALGUS, WITH SUBLUXATION OF THE ASTRAGALUS.

DR. TAYLOR presented a baby affected with congenital calcaneovalgus, with a very unusual degree of dislocation

or subluxation forward of the astragalus. The heel was unduly prominent. The astragalus was displaced forward, while the fibula was behind its normal position. Treatment had consisted of gradual reduction and plaster-of-Paris fixation.

COXA VARA.

DR. WHITMAN presented a boy, sixteen years of age, affected with a bending of the neck of the femur, which condition had existed about twelve months. He walked with a limp and eversion of the foot. The elevation and prominence of the trochanter was increased by flexion. Limitation of abduction, actual shortening of one-half inch, with marked apparent shortening from habitual adduction, all were present. The treatment would be to remove the weight of the body from the weak femur by the use of a perineal crutch, massage, forcible stretching of the adductors and, if necessary, subtrochanteric osteotomy. Bending of the neck of the femur is not due to general rickets or the rickets of adolescence, of which there are cases on record. There is, however, a weakness of adolescence which, under favorable conditions, causes this and similar deformities.

REVIEWS.

HYPNOTISM AND ITS APPLICATION TO PRACTICAL MEDICINE. By OTTO GEORGE WETTERSTRAND, M.D., of Stockholm. Authorized Translation by HENRIK G. PETERSEN, M.D., together with Medical Letters on Hypnosuggestion, etc., by HENRIK G. PETERSEN, M.D. New York: G. P. Putnam's Sons, 1897.

MUCH has been written on hypnotism and suggestion, and much of it is of but little value. To the present book this characterization cannot apply, for the author, while an enthusiast, is not fanatically devoted to this agent as a panacea for all earthly ills. The work is more practical than theoretic, and embodies the results of critical powers of observation. It gives an account of the various ailments to the relief of which the author has applied this therapeutic measure and presents the cases, 128 in number, in which the results have justified the means.

The author's conclusions are modest. He regards functional nervous diseases as most adapted to treatment by suggestive therapeutics. He distinctly says: "I do not see a panacea in hypnosuggestion, to the exclusion of all other means and methods, nor do I in the least wish to assert that its use is always successful." Everyone interested in psychotherapy will find some points of interest in the book.

DIPHTHERIA AND ANTITOXIN. By NESTOR TIRARD, M.D. London: Longmans, Green & Co., 1897.

THIS book deals with the author's personal experience in the treatment of diphtheria. He is a devoted advocate of the use of antitoxin, a position justly based on the record of his cases.

The book presents nothing new, its merit being in the felicitous manner of the presentation of the subject.

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ORIGINAL ARTICLES.

ON THE OCCURRENCE OF PRIMARY TUBERCULOSIS OF THE KIDNEY, WITH SPECIAL REFERENCE TO A PRIMARY MILIARY FORM.¹

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AND

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At the inception of a study of the subject of tuberculosis of the kidney we appreciate the fact that under the same generic term are grouped certain diverse, morbid conditions having nothing in common but their mutual dependence upon the same morbid agent—the tubercle bacillus of Koch. The varying manifestations of tuberculosis of the kidney differ not only as to the time of their occurrence with respect to other possible tuberculous lesions in the body, but also as to their pathologic anatomy, their symptomatology, their diagnosis, their prognosis, and their therapeutic indications. The implication of the kidney in the tuberculous process has interested numerous investigators for a very long time, but their observations usually have been limited to those cases in which the renal involvement was secondary to some other well-established tuberculous lesion in the body. It is but recently—within the past half century—that the possibility and the fact of the occurrence of primary renal tuberculosis has received more than cursory attention; and it is the outcome of these recent studies which has resulted in the establishment of the fact that many cases of renal tuberculosis of supposedly secondary involvement are in reality instances of primary infection. Because of this fact, and reasoning from analogy, one is led to the not unwarranted supposition that primary renal tuberculosis is much more common than is usually assumed.

As is well-known, tuberculosis of the kidney manifests itself in either of two general and quite distinct forms—either as miliary tuberculosis or as caseous

tuberculosis—the latter a condition variously described as chronic tuberculosis, chronic localized tuberculosis, renal or nephrophthisis, tuberculous pyelitis, or tuberculous pyelonephritis—the strumous or scrofulous kidney of the older writers. It is now generally admitted that the latter—that is, caseous tuberculosis of the kidney—may be a primary or a secondary affection; whereas the former—miliary tuberculosis—is commonly regarded as always being the result of secondary infection.

Miliary tuberculosis of the kidney is an acute process, and is generally believed to affect both kidneys. It occurs secondarily to tuberculosis of any of the bodily organs, especially of the lungs, glands, or meninges; and less commonly of the bones, joints, bladder, prostate, etc. It occurs in association with the general dissemination of miliary tubercles throughout the body—in the liver, spleen, lungs, serous membranes, etc. Infection usually takes place by means of the blood-vessels, though if the primary focus be in the lower urinary tract it is not impossible that infection may take place *via* the lymphatics, under which circumstances a unilateral involvement might ensue. The implication of both kidneys, however, is the rule, and there exists a tendency to the simultaneous involvement of more or less of the entire genito-urinary tract. The condition is quite common in the young, and is characterized by the development of varying numbers of small, whitish semi-translucent spots, which later develop into grayish-white or yellowish tubercles, which are generally surrounded by a zone of deeply congested renal tissue. As the infection in these instances is hematogenic, the tubercles are usually found to be most numerous in the cortex, where the bacilli become arrested in the terminals of the renal artery. But they vary much in number, and are not uncommonly distributed without any evidence of regularity. Sometimes they are arranged, as it were, in rows, in the direction of the *vasa interlobularia*, and instances have been recorded in which they seem to be confined to the region supplied by one branch of the renal artery. They usually remain isolated, evincing but little tendency to coalesce, nor do they show the marked tendency to degenerate so characteristic of the caseous form. Rarely, larger areas are formed by the coalescence of several smaller ones. Through tuberculous implication of the walls of the arteries, thrombi sometimes are formed, giving rise to anemic

¹ Read at the Twelfth Annual Meeting of the Association of American Physicians, held at Washington, D. C., May 4, 5, and 6, 1897.

or hemorrhagic infarcts; and at times the arrangement of the miliary tubercles in rows in association with the fatty degeneration of the neighboring renal parenchyma also presents an appearance not unlike infarcts, but the discovery of the small tubercles prevents the error. Microscopically, the tubercles are frequently noted in the Malpighian corpuscles, in which and in the adjoining uriniferous tubules the tubercle bacilli may be detected. The tubercles consist at first of small, roundish areas of epithelioid cells and round-cell infiltration, in the beginning, at least, quite well circumscribed. Later, giant-cells make their appearance, the epithelium of the uriniferous tubules participates in the process, undergoing fatty degeneration, and finally breaking down into a fatty detritus, upon which the entire area may exhibit more or less marked degenerative changes.

As this variety of tuberculosis of the kidney gives rise to few or no manifest disturbances of function of the kidney or of the urinary bladder, and as it is part of a general process of miliary tuberculosis which of itself gives rise to much more obtrusive symptoms than could the kidney lesion, the kidney involvement possesses but little clinical interest or importance. It can hardly be diagnosticated, although Rosenstein is said to have observed anuria in children under such circumstances. The condition, however, usually is not suspected prior to the *post-mortem*. Further, were it possible of detection, there would be no utility therein, as it is not amenable to any kind of treatment.

In contradistinction to this the usual form of miliary tuberculosis of the kidney—a secondary affair—there is another class of cases in which miliary tuberculosis of the kidney occurs as a primary affection and involves but one kidney. These cases must be of some rarity, as they usually are not referred to. Knowsley Thornton and Newmann make mention of the possibility of their occurrence, and Rosenstein and others suggest that the ordinary caseous variety may in its beginning present itself in the miliary form. But primary unilateral miliary tuberculosis of the kidney has, nevertheless, received scant notice. The usual implication of the kidney in the tuberculous process presupposes a tuberculous implantation in a kidney previously healthy. True, some few instances of mixed infection have been hinted at, and other cases of calculous pyelitis, for example, associated with tuberculous disease of the kidney, have been reported. But the occurrence of a primary circumscribed unilateral miliary tuberculosis of the kidney, and in a patient the subject of chronic nephritis, is considered sufficiently unique to justify the report of the following case observed in private practice:

J. H. K., female, aged forty-five years, married, consulted Dr. Stewart during October, 1894, for presumed cardiac trouble. One year previously she had suffered from a mild attack of articular rheumatism, which is said by her attending physician to have affected her heart. This, it had been presumed, accounted for the extreme and distressing breathlessness and palpitation of which she complained. It was stated that her health had always been fair until lately. The attack of rheumatism was said to have been slight. She had suffered considerably from headache during the past year and lately from attacks of severe dyspnea. The latter were becoming more frequent and pronounced, and amounted at times to the most distressing orthopnea. Dyspnea did not seem to be induced by exertion, and was most common during the night. Cough was absent save at the time of some of these attacks.

The patient was of spare build, of medium height, of brunette type, of nervous temperament, and weighed 115 pounds. Anemia apparently was so slight that a blood-examination was omitted. Physical examination of the heart showed the impulse to be extended. A murmur was audible, somewhat harsh, whistling in character, and systolic in time. Although readily discernible at the apex, its seat of greatest intensity was in the tricuspid area. Transmission to the left, other than to a very limited extent, did not occur. The murmur was inaudible beyond the apex. There was marked accentuation of the second sound of the heart; at the base it was more distinct to the right than to the left. Very high blood-pressure was apparent and persisted even after resort to very active purgation and the free use of arterial sedatives. The arteries were tense and of fair volume. The radial pulsation was not readily extinguished by pressure.

The lungs gave no indication of primary disease. Signs of passive congestion, posteriorly, chiefly at the right base, were common.

The abdominal viscera presented no indications of abnormalities.

An examination of the urine, made a few days after the patient was seen for the first time, showed a rather heavy sediment, which was found to consist chiefly of pus. There were present also a few epithelial casts, a number of fine and coarse granular casts, and hyalin cylinders and cylindroids.

The presence in the urine of pus in some amount, which repeated examinations showed to be usual despite any obvious bladder or vaginal condition to occasion it, naturally suggested the thought of tuberculosis of the urinary passages complicating a very obvious chronic nephritis. The patient was totally free from leucorrhea. It is of interest also to relate that although she had been married some twenty years, and was living happily with her husband, who was devoted to her, she was still a *virgo intacta*. The hymen was found later to be perfectly preserved; sexual connection, it was related, never had occurred.

The first search made for tubercle bacilli disclosed them in large number, presenting themselves commonly in typical clumps. Subsequently, these were

repeatedly found both by Dr. Stewart and by his assistant in laboratory work, Dr. Pottberg. Differentiation from the smegma bacillus, of course, was carefully made. When the patient first came under observation, the urine was apt to be turbid when voided, of low acidity, and readily decomposable. Subsequently, perfectly clear specimens were passed, depositing pus as formerly. A number of examinations of the mixed urine showed that albumin was present, commonly in about one-tenth per cent. by weight. An account of the daily twenty-four-hour urine was taken for two or three days weekly during the greater part of the time the case was under observation, both to maintain a watch on nitrogenous excretion and to determine as to a possible pyonephrosis. There were at no time indications of blocking of the ureter. The amount voided was commonly between 750 and 900 c.cm. It was readily increased by diuretics. The specific gravity usually was moderately low, as was the urea output. The latter, for her weight, should have been 25 grams; while even under full diet and diuretics it did not exceed 14 grams, and commonly was less.

The case was early diagnosticated as one of chronic nephritis, complicated by a probable tuberculosis of the kidney. There were no indications of involvement of the bladder. Vesical irritability, pain, and tenderness were altogether absent.

Although nothing was to be hoped for from a more exact knowledge, the patient acquiescing, Dr. C. P. Noble's cooperation was obtained to make an inspection of the bladder and to attempt to catheterize the ureters, in order to determine the extent of the tuberculous involvement. On cystoscopic examination, the bladder was found healthy. Catheterization of the ureters was attended with such difficulty, because of the very tight hymen, that the attempt was, for this reason, abandoned; and especially because, even if the tuberculous process had been found limited to one kidney, an operative procedure was out of the question.

The patient was under almost daily observation from the time she was first seen (October 21, 1894) until the date of her death—about five months later. During this time her symptoms were such as the chronic nephritis and an imperfectly compensated mitral valve lesion would occasion. There were pronounced uremic symptoms, which were held in check for several months by appropriate remedies, but during the two months preceding her death were totally uncontrollable. Early in February, 1895, she began to fail visibly. She was unable to leave her house. There was pronounced and persistent insomnia and debility. Dyspnea was the most obtrusive symptom; it occurred in spells, most frequently at night, which amounted to veritable attacks of orthopnea. Without apparent cause the respiration would suddenly become accelerated, reaching 50 or 60 per minute, and occasionally higher. This would persist for an hour or more. The attack would then subside, and a condition of comparative comfort ensue. With these attacks of dyspnea there was often pronounced pulmonary conges-

tion. In one of these spells, ten days before death, the indications were of the occurrence of pulmonary infarction. The patient was suddenly seized, while at rest, with difficult breathing; the respiration quickly ran up to about 70; the face became deathly pale and the extremities cold; there developed a short, hacking cough, with frothy, blood-streaked expectoration. The heart's action was tumultuous. Ammonium carbonate and whisky were administered by the mouth at frequent intervals, and strychnin given hypodermically, while oxygen inhalations were maintained and hot poultices applied to the chest. In the course of an hour the attack entirely subsided and the patient fell asleep. Two hours later, when again seen, she was resting comfortably; respirations were 30; the pulse 100; temperature, 100° F. The heart was overacting, with marked reduplication of the second sound. An area of solidification at the root of the right lung was apparent.

Free dry cupping in the early evening usually tended to prevent the occurrence of the night seizures, and a prompt resort to the same, on the appearance of the dyspnea, commonly afforded great relief. Oxygen inhalations were steadily used, and always with marked benefit.

Without cardiac medicaments of any sort, the heart generally overacted very much, with sharp accentuation of the second sound at the apex. High blood-pressure was so usual, even with symptoms which might have been presumed to be caused by imperfect compensation, that these last, such as decided dyspnea, could not but be regarded as uremic in character. Free purgation by calomel always relieved, if it did not entirely prevent, the attacks of dyspnea until toward the end.

Careful daily thermometric observations were made for two months prior to the death of the patient. Previously the temperature had often been taken when she was visited during the afternoon or evening. There was then commonly present slight elevation, not amounting usually to over 1½° F. During the two months preceding death the temperature did not exceed 100° F. It was generally 99° about noon, and from 99½° to 100° F. between 4 and 6 P.M.

Two months prior to death the stomach became much distended. Vomiting occurred at least once daily. The vomited matter contained no free hydrochloric acid. When food was present in the stomach, the vomit consisted of clear fluid, which a few days before death had a urinous odor. During the last two weeks of life, vomiting was quite incessant, whether food was taken or not. It was not readily controlled by drugs. It was clearly a uremic sign. The urine during the last month steadily diminished in quantity, not exceeding a daily amount of 600 c.c. Toward the end it fell to 150 c.c., totally without signs of retention in the kidneys. Casts were always found, and in the examinations, made a week or so prior to death, erythrocytes were present in some amount in addition to the pus-cells. High blood-pressure was maintained up to a day or so before death. The heart showed no signs of failure, being perfectly regular in action an hour

or so before dissolution. It continued overacting, with accentuation of the second sound at the apex. The systolic murmur could be heard only inconstantly during the last two weeks of life. For several days before death she vomited continually, and was stuporous. During the last two days she was comatose; the respirations were irregular, and generally did not average over twelve per minute.

The necropsy was performed (by Dr. A. O. J. Kelly) seventy-two hours after death. The body was that of a fairly well-developed female; *panniculus adiposus* slight; the muscular tissues somewhat atrophic. The natural appearances of the tissues and organs of the body were somewhat disturbed, particularly in the direction of excessive dryness, and the serous cavities more or less filled with the embalming fluid. The thoracic and abdominal viscera had their normal positions. The left pleural cavity contained turbid, red fluid. The visceral pleura was firmly adherent to the costal pleura posteriorly and below and to the diaphragmatic pleura. Except some slight deficiency of tissue at the edges, the left lung was normal. There were no evidences of tubercular deposits. The right pleural cavity also contained turbid, red fluid. The two layers of the pleura were adherent posteriorly and below. The upper and middle lobes of the right lung were normal. The lower lobe was rather dense and heavy, but contained air. There were absolutely no evidences of tuberculosis in the lungs. The pericardium contained about 10 c.cm. of clear serum. The heart was much enlarged, the wall of the left ventricle being twice its usual thickness. On the posterior mitral leaflet there was a small islet of thickening. The tricuspid valve leaflets, as far as could be told, appeared normal; the specimen, however, showed such decided *post-mortem* changes that it was impossible to speak positively concerning this. The aortic and pulmonary leaflets were normal. The omentum was normal. The liver was of about normal size; its capsule was normal. On section, the center of the acini was reddish-brown, the periphery more yellowish. The gall-bladder was normal. The spleen was somewhat increased in size and rather dense. On section, it was smooth, dark reddish-brown in color, and showed its capsule and trabeculae thickened. The stomach, pylorus, duodenum, appendix, cecum, and large and small intestines were normal. The left kidney was of about normal size, but denser than normal. Its capsule was here and there somewhat adherent. The surface was mottled in appearance, of a general grayish-red hue, with a few yellowish points alternating with dark-reddish spots. On section, the cortex was normal or slightly increased in thickness. There were yellowish-gray striations, with here and there distinct spots of dark-reddish brown color. The left kidney had two ureters, both healthy. One was smaller than the other, and they joined just prior to their entry into the bladder. The right presented the same general characteristics as the left, save as concerns the pelvis. This was dilated and contained pus. The surface of the pelvis was studded with

about a dozen and a half or more of small miliary tubercles of grayish-white and yellowish color. The ureter was normal. The bladder was healthy. It contained a small amount of pus from the kidney pelvis. The uterus was somewhat atrophic. Attached to its right cornu was a pedunculated fibroid, the size of a goose-egg; on its anterior surface, to the right of the median line, was a small, calcareous fibroid, the size of a small chestnut. The tubes appeared a trifle thickened, but otherwise normal. The ovaries were atrophic. The retroperitoneal glands were normal.

The pathologic diagnosis was chronic diffuse nephritis with tuberculous pyelitis of the right kidney; hypertrophy of the heart; chronic induration of the spleen; nutmeg liver.

A subsequent examination of the pus from the pelvis of the kidney and of that found in the bladder (originally from the kidney) disclosed the presence of tubercle bacilli in both. A microscopic examination of the diseased organs confirmed the macroscopic diagnosis. No disease of the Fallopian tubes could be detected.

This case, therefore, of primary miliary tuberculosis of the kidney is presented as an instance of that rare class of cases characterized by the development of miliary tubercles in but one kidney and unassociated with any other discoverable tuberculous lesion in the body. It is also to be noted that this variety of tuberculosis of the kidney does not of necessity progress to the ordinary or caseous form of primary disease, but that it rather continues as it originates.

Quite distinct from the unusual primary miliary tuberculosis of the kidney is the other and much more common variety of primary tuberculosis of the kidney, the caseous variety. As the miliary, so also the caseous variety, commences in that portion of the kidney to which the bacilli gain access and are arrested. The primary focus is usually in or near the renal papillae, and from here the process spreads to the surrounding renal parenchyma. When the process does not begin in the papillae it may commence in the calices, or in the pelvis of the kidney, or in the cortex; and it is quite probable the cortex is much more frequently the point of departure for the general involvement of the kidney than is commonly supposed. Again, it sometimes seems that, as in the miliary variety, the regions supplied by one branch of the renal artery are, for a time at least, alone affected. The initial lesion being usually situated in the papillae, therefore, it is a matter of but a short time until the tuberculous virus, partly by way of the blood-vessels, partly by way of the lymphatics, and partly, also, by way of the uriniferous tubules, is carried within the substance of the kidney, setting up, at its place of lodgment, lesions similar to those

from whence it came. The process commences by the formation of grayish nodules, which differ from the formations of miliary tuberculosis in their much greater size, and by the tendency they early manifest to undergo caseous necroses. So marked is this tendency that shortly after its formation in the conglomerate tubercle isolated tubercles are frequently impossible of detection. Thus an irregular, softened area is soon formed, and this, by a process of peripheral extension, gradually spreads in all directions, especially toward the cortex. Being near to the pelvis, the latter soon become implicated in the process. The mucous membrane of the kidney pelvis may be the seat of either an eruption of miliary tubercles or of a diffuse tuberculous infiltration. Thus, by an increase in the size of an initial lesion, and by the development of other tuberculous foci, the result of added infection, there occurs a time when the caseous areas spreading toward the periphery implicate the medulla, finally the cortex, and may eventually involve a major portion of the organ.

As these areas degenerate the kidney becomes the seat of irregular, roundish cavities if the necroses occur within the parenchyma of the organ, or of a tuberculous, ulcerating surface if the pelvis be affected. If the process originate in the cortex, as it may, the focus, degenerating, gives rise to a closed cavity. These and other caseous masses within the parenchyma of the organ as they become necrotic are apt to assume a form corresponding to the papillæ—that is, they become pyriform, and, reaching the pelvis, rupture into it. The latter, thus originally encroached upon by the new tissue-formation, increases in size as the necrotic material is discharged into it. It communicates with the several cavities, and one may speak of a *phthisis renalis tuberculosa*. The various cavities are at first separated from each other by walls containing more or less renal parenchyma. Sooner or later these also are involved, become necrotic, break down, and are removed. The kidney is thus converted into a many-chambered cyst, with established communications between the various cavities. These, reaching toward the periphery, are often visible from the exterior, and give to the organ a somewhat bossellated appearance. That tissue nearest the center of the necrotic area is yellowish in color, indicating that here the disease is more advanced and the process degenerating, while that toward the periphery is grayish and of newer formation.

Microscopically, the caseous masses often fail to reveal any vestiges of tubercular formation, justifying the term caseous inflammation or nephritis caseosa, especially as the uriniferous tubules are apt to be found filled with caseous material (proliferated, de-

generated, and caseous epithelium). At the periphery of the caseous masses the nodular make-up of the new tissue-formation is, however, readily recognized, and epithelial cells, giant-cells, round-cell infiltration, and tubercle bacilli are encountered. These latter often are found in greatest number within the uriniferous tubules, by way of which, as already remarked, the process may spread. The process also may attack a minute blood-vessel, and, the caseous matter rupturing into it, thus give rise to extension. The glomeruli are often the seat of round-cell infiltration.

Late in the course of the disease the appearance of the kidney is quite characteristic. It has entirely or in part become converted into a many-chambered sac, the various cavities of which vary much in size and in number, ten to fifteen not infrequently being encountered in one kidney. They usually communicate with themselves and with the pelvis of the kidney—the former by implication and subsequent caseation of the septa; the latter by the rupture into the pelvis of the degenerated foci. So extensive may be the destruction of the kidney substance that the septa may be entirely wanting and the kidney may have been converted into one huge sac, the wall of which will vary much in thickness in different parts. On their inner aspect these cavities are rough and irregular and are covered with a caseous material of a dirty-grayish color. Occasionally one detects appearances suggestive of attempts at healing of a primary tuberculous focus, in the shape of calcareous plates or granules. The contents of these cavities much resemble putty. The cyst or cavity contents are usually of dirty-grayish color. With admixture of much pus they approach a yellowish color, and blood bestows a reddish tint. Not rarely they are serosanguinolent. The cyst contents are of a urinous odor and always deposit a sediment. The latter consists of a cheesy detritus, partially degenerated tubercles, caseous renal tissue, blood, pus, and triple phosphates, less frequently, calcareous matter, phosphate and carbonate of lime, cholesterin, etc.

On external examination the kidney may appear to be of about normal size; or, with preservation of its configuration, it may be moderately or greatly increased in size. The latter is usually observed late in the course of the disease, and is induced by a pyonephrosis secondary to blocking of the ureter. This leads to distention and sacculation of the organ, and finally to complete destruction of all secreting structure. Should one organ only be involved, the drying up of the fluid contents leads to an atrophic kidney, containing inspissated, putty-like masses; or, rarely, one kidney may present an appearance

akin to this, while the other may be of about normal size or greatly distended—the seat of pyonephrosis. The kidney is quite adherent and greatly thickened. Not rarely it forms intimate associations with the perirenal fat—that is, it is well-nigh impossible to separate or distinguish them.

Associated with the disease of the kidney substance, the pelvis usually manifests lesions peculiar to itself. As already alluded to, it may constitute the seat of primary infection. It may thus be affected prior to, simultaneously with, or subsequent to, the kidney lesions. It may be the seat of miliary tubercles, tuberculous infiltration, or both. Originally encroached upon by the increase in size of the kidney by the developing tuberculous new formation, as the caseous foci discharge their contents into it, it augments in volume. It usually is covered with dirty-grayish, putty-like or membranous-like formations, under which or between portions of which, tuberculous ulcerations are common. Late in the course of the affection, with extensive destruction of the kidney and free communication between the cavities and the pelvis, the limits of the latter are usually not determinable. The pelvis usually is dilated from obstruction of the ureter, and contains substances similar to those detailed as occurring in the kidney cavities.

The ureter presents lesions the counterpart of those found in the pelvis. On external examination it may appear distended, but upon section its walls are usually found thickened and its lumen decreased. Its inner surface is irregularly ulcerated and covered with a dirty-grayish or yellowish, membranous-like formation. This, with the thickening of the sub-mucous coat, leads to constriction or obliteration of the lumen and the conversion of the ureter into a more or less rigid tube. Obstruction of the ureter also may be induced by arrested blood-clots or caseous material, be it masses or shreds. The obstruction leads to distention and thinning of the parts above, and consequent dilatation of the pelvis and renal cavities.

When the destruction of the renal parenchyma is well advanced, and the walls of the cavities have become thinned, perforation not infrequently ensues, leading to the formation of perirenal abscesses. These have also been said to be due to lymphatic infection, but this, if it occurs, must be very rare. In general, these abscesses present characteristics similar to those of the renal cavities. They are often made up of irregular, communicating cavities containing material similar to that in the kidney. They extend in all directions, and, though of slow development, may make their way through the diaphragm or into the iliac fossa, or they may even perforate externally.

The bladder is usually contracted, and has thickened walls depending upon hypertrophy of the muscularis and induration of the mucous membrane, which may be tuberculous or not. The mucous membrane may be the seat of an eruption of miliary tubercles or of more extensive tuberculous infiltration or ulceration, particularly at the trigone and fundus, but not uncommonly the tuberculous process terminates at the ureteral orifice of the bladder. It must be mentioned, however, that it has been asserted that the microscope will sometimes reveal tuberculous lesions of the bladder when to the naked eye the viscus appears healthy.

A marked characteristic of this variety of primary tuberculosis of the kidney is the tendency of the other portions of the genito-urinary tract to be implicated in the process—whence the common designation, urogenital tuberculosis. Not rarely both kidneys are found diseased—one, however, usually in a more advanced stage of the disorder than the other. The involvement of the ureter and the bladder already have been referred to. There are often found tuberculous lesions of the testicles, epididymis, vas deferens, or prostate. At times the seminal vesicles alone may be affected. In the female the Fallopian tubes may be the starting-point of a urogenital tuberculosis, but at the same time an uncomplicated urinary tuberculosis may occur. These associations of the renal disease, while not always found, still have important pathologic, clinical, and therapeutic bearings.

(To be continued.)

PRACTICAL REMARKS ON SHOES.¹

By ROYAL WHITMAN, M.D.,
OF NEW YORK.

THE object of the shoe is to cover and to protect the foot, not to deform it or to cause discomfort; therefore the one should correspond to the shape of the other. If the feet are placed side by side, the outline and the imprint of the soles will correspond to the accompanying diagram. The outline demonstrates the actual size and shape of the apposed feet, emphasized by enclosing them in straight lines. Thus, each foot appears to be somewhat triangular, being broad at the front and narrow at the heel. The imprint shows the area of bearing surface, and owing to the fact that but a small portion of the arched part of the foot rests upon the ground, it appears to be markedly twisted inward. The sole of the shoe, if it is to enclose and support the bearing surface, must also appear to be twisted inward in an exaggerated right or left pattern; it will be straight

¹ Read at a meeting of the Harvard Medical Society of New York, May 22, 1897.

along the inner border, to follow the normal line of the great toe, and a wide outward sweep will be

FIG. 1.

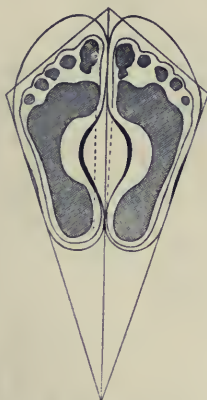


Normal feet.

necessary in order to include the outline and thus to avoid compression of the outer border of the foot.

I have found this statement of a self-evident fact and the demonstration of the true form of the foot

FIG. 2.



Proper soles for normal feet.

to be almost an indispensable preliminary to an intelligent discussion of the relative merits of shoes, and, indeed, somewhat of a revelation to those who have thought of the foot only as it has been subordinated to the arbitrary and conventional standard of the shoemaker. This ideal, or shoemaker's foot, upon which lasts are fashioned is much narrower than the actual foot; the great toe is not a powerful movable member, provided with active muscles, but is small and turns outward so that the forefoot is somewhat pyramidal in form, and turns upward as if to avoid the contact with the ground. This imaginary foot, drawn after the shape of the ordinary last, appears in the third diagram. Upon it the sole of the shoe has been indicated (Fig. 4), to contrast it with the shape of that necessary to include the outline of the normal foot. The actual foot is thus compressed laterally by the shoe until the stretching of the leather during

the "breaking-in" process allows it to overhang the sole, the great toe is forced outward, and, with its

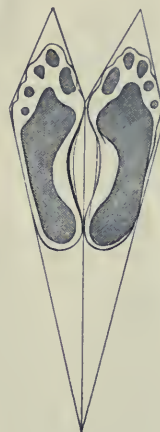
FIG. 3.



Shoemaker's feet.

fellows, is compressed, distorted, and lifted off the ground by the rocker-shaped sole, so that normal

FIG. 4.



Shoemaker's soles.

function is reduced to the smallest limit. Thus, the foot, according to the age at which the reshaping

FIG. 5.



The rocker sole.

process is begun and the constancy of the application, gradually approaches the ideal and fits the shoe.

This remodeling, however, is often accompanied by such discomfort that the individual rebels and wears a shoe with a square toe, which, from the conventional standpoint, is supposed to show a meritorious effort to follow Nature; but the demonstration of

the actual foot makes it evident that it is a properly shaped sole which serves as a support, not the part which projects beyond the foot, that is of importance. If the shoe with the square toe is wider and straighter on the inner side than another with a pointed tip, it is in so far an improvement; but, as a matter of fact, one of the worst types of shoe provided for children, in shape very like the old-fashioned coffin lid, owes its popularity to the square toe. The same comment may be made on the so-called "common-sense shoe," which is well named,

FIG. 6.



Skiagram of a foot modeled to fit the shoe.

since it may be assumed that a properly shaped shoe is an evidence of uncommon sense.

The object of the heel is to make walking easier by inclining the body somewhat forward. The high narrow heel is an insecure support, and aids deformity by throwing more strain upon the forefoot and pushing it forward into the narrowest part of the shoe. The heel is of course unnecessary in childhood, and should not be worn, since it limits the necessity for, and therefore the use of, the normal range of motion at the ankle-joint. The ordinary shoe, by limiting the functional use of the foot, favors awkwardness

in gait and attitude; it compresses the toes, and is directly responsible for corns, bunions, ingrown toenails, and deformities, and indirectly it causes or aggravates nearly every weakness to which the foot is liable. This assertion does not need the support of argument, since in some degree it has been proved by the personal experience of every shoe-wearer.

The shape of the proper shoe corresponding to the undistorted foot has already been demonstrated. The sole should be thick enough for protection, but not so rigid as to limit normal motion; it should follow the imprint of the foot, projecting somewhat beyond the outline of the toes; it should be flat, and the upper leather should be capacious—in other

FIG. 7.



The flat sole.

words, the front of the shoe should be designed to allow and to encourage functional activity, the slight adduction of the great toe and the alternate expansion and contraction of its fellows, as may be observed in the barefoot child. Thus the arch may be assisted, and the weight and strain properly distributed. The heel should be broad and low.

The shape of the shoe is regulated by fashion and ancient custom, although it has been spoken of as the shoemaker's ideal for convenience of description. Shoes are made to sell, and if better shoes were desired they would be produced; but long familiarity with discomfort and deformity has distorted the public taste so that deformity is not only not recognized as such, but when concealed in the shoe it is illustrated as a type of beauty.

Reform in shoes will be a gradual process, and it will come through the conversion of the individual. Conversion is not enough, however; one must not only be convinced that his shoes are bad, but he must be informed where better ones may be obtained. Thus practical reform must begin with education of a shoemaker, and the displacing of some of his inherited or accumulated lasts by those of a better model. This is not an easy task, but my experience proves it to be possible. It has been said, with truth, that physicians are not consulted on the subject of shoes, but, on the other hand, it must be remembered that the foot has long been abandoned to the shoemaker and corn-doctor, and it is only during recent years that any particular or general interest in its diseases or disabilities has been manifested. Even

at the present time it may be doubted if the shoes worn by physicians themselves will show great advance or improvement over those worn by others less familiar with the anatomic construction of the foot. It would seem, however, that such knowledge should make one better able to appreciate the bad effects of compression and deformity and the more willing, therefore, to set an example to others. This is of importance, because every wearer of a better shoe becomes a reformer involuntarily, if only to justify the shape of the shoe he wears; and the physician, in addition, will find many opportunities to select or to suggest the selection of the better from the worse type of shoes which are provided, even if no radical change is desired or attempted. In such selection, the breadth of the sole, the angle of outward deviation of the soles when the two are placed side by side, and the capacity of the upper-leather must be the determining points. As a rule, what is known as the wide Waukenphast pattern for men and children will be found the best, and even the shoes made for women will permit of reasonable choice. Nearly all adult feet are more or less deformed, and therefore better adapted to an improved than to a perfect shoe. Moreover, it is by the more extended use of the better type of shoe, such as is now made by the more intelligent shoemakers, that a general advance may be anticipated.

It is encouraging to note that the foot, once allowed a certain freedom, resents most effectively a return to restriction and compression, and that the deformed foot shows a marked tendency toward improvement when a shoe is provided which allows the long disused muscles to exercise their function—a fact which is of great importance in the treatment of actual disability.

The most effective work for reform can be accomplished by providing better shoes for children; and especially since one encounters inertia, rather than active resistance, most parents have suffered sufficiently to be willing to permit the child to wear a proper shoe, even though it may offend their conception of beauty and symmetry. The inspection of children's feet shows that atrophy and compression begin at a very early age, and if protection might be assured during the period of rapid growth, serious distortion might be prevented.

Although of far less importance than the shoes, the socks worn by children deserve special mention as a factor in deformity, since they are often too short and too narrow and are made of unyielding material, so that the proper action of the toes is restrained. Theoretically, the socks, like the shoes, should be rights and lefts, but if they are sufficiently large and of a texture to expand readily to the shape

of the foot, but little trouble need be anticipated on this score.

In conclusion, it is again urged that there can be but one standard upon which the shoe can be judged, and this standard is the undistorted foot; therefore, the sole of the shoe, whether it be oblong or triangular, whether the tips be round or square, or whatever may be the minor variations, must be long enough and broad enough to support the foot, and the upper-leather must be capacious enough to contain it without compression of the toes. If one is interested in reform, he must find a shoemaker willing to make proper shoes for perfect feet, or, having ascertained the best type of the ready-made shoe, this only should be recommended. It may be assumed that manufacturers of the cheaper shoes are sensitive to changes in demand, and that with little effort on the part of physicians and others an improved, or even proper, shoe might be found on sale side by side with that of the conventional model, and for the same price.

Reform must be made simple, it must be inexpensive and, in fact, involuntary to be effective. Gradually, however, it may be hoped that the shape of the natural foot will displace that of the conventional model, so that deformity may be recognized; then the fact that the foot must give distinction to the shoe, and not the shoe to the foot, will be established.

**THE USE OF IODOFORM IN SUPPURATIVE
CERVICAL ADENITIS, SINUSES, ETC.,
WITH A REPORT OF SIX CASES.¹**

BY D. ERNEST WALKER, M.D.,
OF NEW YORK.

DURING the summer of 1896 a number of children came under my care who were suffering from glandular affections of the neck arising from a poor general condition, which were accompanied in a few cases by a tuberculous diathesis. With few exceptions all of these cases had reached the suppurative stage, and in most of them satisfactory excision of the glands was out of the question.

Up to the middle of June I had treated the suppurative cases by free incision, afterward washing out the cavities with antiseptic solutions, usually carbolic acid or bichlorid of mercury, and in some cases peroxid of hydrogen. Then, if drainage was considered necessary, iodoform gauze generally was used. The abscess cavities were not curetted, but were carefully swabbed out with cotton wet in the antiseptic solution. The trouble experienced from the refilling of cavities which were not drained, and the redressing of those which were, as well as the slowness with

¹ Read before the Society of the Alumni of the City (Charity) Hospital, April 7, 1897.

which some of them healed, led me to cast about for some method which would prove less troublesome. I therefore determined to try a ten-per-cent. iodoform ointment made up with vaselin, as used in suppurative buboes, concerning which Dr. Otis¹ has written so favorably. I confess that at the time I felt somewhat dubious as to the safety of employing a ten-per-cent. iodoform ointment in the case of a child, but decided to use it as no ill effects had been reported in any similar case. I was also influenced by the fact that the abscess in the first case in which I decided to employ the remedy was a small one.

CASE I.—This was a female child, fourteen months of age, with a good family history, but in poor general condition. The child was anemic, but not thin, and her flesh was flabby. There was an acute adenitis on the right side of the neck accompanied by heat, redness, and pain. There was also a swelling on the left side of the neck. Both enlargements were among the submaxillary group of glands, and that on the right side was softened at the apex. That on the left side gave no signs of suppuration.

After first washing the neck with soap and water, and then with bichlorid of mercury solution, 1 to 4000, I made a small incision into the apex of the abscess on the right side of the neck, evacuated about half an ounce of pus, and carefully washed out the cavity with the 1-to-4000 bichlorid solution. Then, with a glass syringe previously warmed in hot water, I filled the cavity to slight distension with a ten-per-cent. iodoform ointment, and placed immediately over the opening a cotton compress wet in cold bichlorid solution. Over all was placed a simple dressing of borated cotton. After two days I refilled the cavity, from which there was only a slight serous discharge, and five days later the abscess was completely cured. On the fifth day I opened the abscess on the left side, which in the meantime had become inflamed and painful. It contained about one dram of pus, and required but one treatment, healing completely in four days.

CASE II. was that of a female child, five years old, with a tuberculous adenitis, who was brought to my office by a professional friend to whom I had spoken of the previous case. One gland among a mass of others on the right side of the neck was red and soft at the apex, but there was no heat or pain. I pursued the same method as in Case I. evacuating a dram or two of curdy pus, washing out afterward, and filling the cavity as before. The cavity closed completely in five days, after being refilled once. Another gland among the mastoid group, which softened a few days later, was treated in the same way and speedily healed without being refilled.

CASE III. was that of a middle-aged man whom I saw in consultation with Dr. Holmes. He had an acute adenitis affecting the deep cervical glands. There was a large swelling on the left side of the neck which displaced the *pomum Adami* far to the right. There was some edema, but no perceptible

fluctuation. A slight softening could be detected at the anterior border of the sternocleidomastoid muscle at the side of the larynx. The attack had been ushered in by a chill and severe pain.

When seen there was marked heat and redness, but not much pain. The patient's temperature was slightly elevated, and his general condition was much below par. Immediate operation was advised, and under ether I made an incision through the skin and fascia. Deep in the region of the carotid an ounce or more of pus was found. The cavity was treated in the same manner as in the previous cases, and it closed completely in six days. It was refilled once.

CASE IV.—An adult female, a patient of Dr. Holmes, while convalescing from typhoid fever developed a large abscess in the gluteal region, which, owing to her prostrated condition, was not noticed by the nurse until it was on the point of bursting. It opened spontaneously before the doctor had an opportunity to incise it. The cavity extended among the gluteal muscles to a depth of about four inches. After thorough disinfection it was filled with ten-per-cent. iodoform ointment, and after this was repeated twice cure was complete.

CASE V. was one of mastitis, in a woman about twenty-five years old. An abscess containing about half an ounce of pus had pointed near the right nipple. Results had been so satisfactory in other abscess cases that the iodoform treatment was tried in this one with complete success after one refilling.

I previously had tried to induce a friend to adopt this procedure in a case of mastitis which I saw with him, but as he feared absorption and poisoning, the abscess was opened freely and drained by means of gauze. Recovery was very slow.

CASE VI. was that of a middle-aged man whom I saw with Dr. Mowry. It was a severe case of cellulitis following a wound in the calf of the leg inflicted by the teeth and claws of a cat. There was so much destruction of cutaneous tissue and so many sinuses to be laid open that when the inflammation had somewhat subsided we determined to try the iodoform ointment treatment in two large sinuses running upward beneath the skin toward the popliteal space. These were so extensive that a five-per-cent. ointment was used. The smaller sinuses closed after two treatments, but in the others there seemed to be no improvement except in the amount of the discharge. After a few trials, therefore, this treatment was discontinued and the cavity packed as before with iodoform gauze. After a few more days, with no perceptible improvement, a large slough was drawn out from the cavity, which was again filled with the ointment, with most happy results. The cavity easily held an ounce and was not refilled afterward.

The general procedure, while it differed in some particulars from the iodoform treatment of bubo, was practically the same in all these cases. The parts were carefully cleansed and disinfected, and, after making a small incision, cavities were thoroughly washed out with a 1-to-4000 solution of bichlo-

¹ Amer. Jour. of the Med. Sciences, May, 1893.

rid of mercury. In one case, carbolic solution, 1 to 100, was used. All pyogenic material was carefully expressed. The cavity or sinus was filled to slight distention with warm iodoform ointment, and a compress wet with cold bichlorid solution was placed immediately over the opening in order to solidify the ointment. A simple aseptic dressing was then put on, care being taken not to make sufficient pressure to force out the ointment. This dressing was not removed in any instance until two or three days had elapsed unless it became soiled with discharges from the wound, and in no case except No. IV. were more than two applications made. I cannot say that a second dressing was necessary in any of the other cases, except in one in which there was a little pus found when the first dressing was removed. In all of the others there was only a slightly colored serous discharge, which always seemed to me to be a sign of success. I refilled the cavity in those cases in which there was any discharge, simply to prevent possible closure of the external wound by any pus remaining in the cavity.

The advantages of this plan over the usual methods of treating suppurative adenitis in children seem especially worthy of note. The methods generally employed are: (1) Simple incision with or without drainage; (2) excision or enucleation; (3) scooping or curetting; (4) cautery puncture. All of these, except the first, usually require the administration of an anesthetic, and all are liable to leave a wound which heals slowly by granulation. In addition, all have a tendency to leave disfiguring scars, and in all, redressing, when drainage is employed, is very troublesome.

The advantages of the iodoform treatment may be summed up as follows: (1) Its simplicity. (2) Its easy application. (3) The avoidance of troublesome redressings. (4) The small incision required and the small resulting scar. (5) The rapidity of the reparative process. The employment of this method in the treatment of mastitis, and in troublesome though simple sinuses, and in pyogenic tracts in which it is difficult to secure good drainage, seems worthy of further trial. It is important to bear in mind, however, that any sinus or cavity which contains anything of the nature of a foreign body, such as sloughs, necrotic bone, etc., are apparently not benefited by it.

I question whether absorption is sufficiently rapid in pyogenic tissue to cause iodoform poisoning from the use of a ten-per-cent. ointment. Certainly no symptoms of poisoning occurred in any case which came under my notice, and I used as much as one ounce of the ointment on several occasions. A five-per-cent. ointment acted just as well as one of ten-

per-cent. strength in the one case in which I employed it, and in a majority of instances a still weaker combination probably would be successful. Abscess cavities or sinuses should not be curetted, as this but adds to the danger of absorption of the drug and consequent poisoning.

My experience has led me to believe that this treatment may prove of great value in certain cases of empyema, though one would be inclined to fear that absorption of the drug would be so great that its use would not be permissible. Should it succeed in this affection, one might speculate on its possibilities in the treatment of pelvic abscess or abscess of the liver.

Since this paper was written I have learned that Wieland¹ has reported twenty-one cases of tuberculous abscess treated by routine injections of iodoform in sterilized oil or glycerol, ten per cent., with sixteen cures. Four of his patients developed symptoms of iodoform poisoning.

PENETRATING WOUNDS OF THE LIVER; REPORT OF A CASE.

BY JAMES KERR, M.D.,
WITH THE COLLABORATION OF
J. H. FORD, M.D.,
OF WASHINGTON, D. C.

ON November 10, 1894, at 7.30 P. M., J. C., aged twelve, colored, male, was brought to the Emergency Hospital suffering from a gunshot wound of the abdomen, which had been received half an hour before, the weapon being a 22-caliber rifle. Upon admission, shock was marked and there was great pain and tenderness over the epigastrium. The pulse was rapid and feeble, and the respiration, thoracic in character, was shallow and quick. The pupils were dilated and the temperature subnormal. There was no nausea or vomiting. Two wounds were found, that of entrance, between the eighth and ninth ribs, on the right side, and 6 cm. to the outer side of the nipple, and that of exit, 7 cm. above and to the left of the umbilicus. Through the latter a piece of omentum 4 cm. in length protruded.

The boy immediately was treated for shock, $\frac{1}{4}$ th of a grain of strychnin and $\frac{1}{16}$ th of a grain of morphin being administered hypodermically, with whisky by the mouth and the external application of heat. At nine o'clock he was placed on the operating-table, the abdomen prepared, and an incision made from the umbilicus upward for 15 cm. The protruding omentum was drawn through the wound of exit, clamped, ligated with silk, and cut off. A large clot was found on the surface of the liver. The left lobe was lacerated for 12 cm., the wound extending across the notch. There was free hemorrhage from this and from the opposing surfaces of the notch, which was controlled by the application of compresses wrung out in very hot salt solution. The laceration was sutured with silk.

¹ *Deutsch. Zeit. f. Chir.*, xli, 4, 5.

The probability of extreme shock having been recognized at the outset, the patient had been covered with hot blankets and surrounded by hot water bottles, and as the pulse and respiration were now failing rapidly, transfusion was resorted to and continued until the operation was completed, about two liters of normal salt solution being injected into the left median basilic vein.

The abdominal incision was then extended from the xiphoid cartilage to a point 6 cm. below the umbilicus, and the parietes being well retracted, a wound 20 cm. long was found across the convex surface of the right lobe of the liver, extending, as did the one in the left lobe, to a depth of from 3 to 5 cm. This wound also was sutured and about a quart of hot salt solution poured into the abdominal cavity, and, with the effused blood, allowed to remain. The patient reacted well and was sent to the ward with good pulse and respiration. His recovery was jeopardized by what appeared to be simple intestinal paralysis following the operation, which only yielded to very brisk purgation. With that exception he made an uninterrupted convalescence. The wound was dressed on the tenth day and the sutures removed.

The features of the case which appear to be most important are (1) the early operation, just as soon as the shock of the accident justified it; (2) the provision for carrying out transfusion while the operation progressed; (3) the immediate control of hemorrhage after having rapidly opened the abdomen and compressed the bleeding surfaces, and the permanent control of the hemorrhage by sutures. The sutures were introduced by means of a large, full-curved needle well back from the edges of the wound.

The operation was as rapidly conducted as was compatible with carrying out the various procedures mentioned. No effort was made to clear the abdomen of clots. During the exposure of the wound in the liver it was necessary to divide the falciform ligament. This was not sutured, and the wound in the parietes was closed with as few sutures as possible.

The following summary is made from the available literature on the subject of wounds of the liver and may be averaged thus: Total number of cases, 51; recovered, 33; died, 18; mortality, 35.2 per cent.

Since in four of these cases no operation was performed, a table showing the mortality of the remaining cases would stand thus: Number of cases operated on, 39; recovered, 26; died, 13; mortality, 33.3 per cent.

I have had reports collected of thirty-nine cases of wounds of the liver which were treated either by gauze tampon, sutures, or the Paquelin cautery. These statistics, like those given above, show the greater desirability of suturing in these cases.

Method employed.	Number of cases.	Recovered.	Died.	Mortality, per cent.
Sutures only.....	24	17	7	29.1
Gauze tampons only.....	4	1	3	75.0
Sutures first, but when these tore out gauze tampons ¹	83	1	2	66.6
Unclassified methods.....		7	1	12.5
Tube inserted in track of wound after being wrapped in gauze.....	1	1	0	0
Gallic acid administered and lower chest strapped tightly with adhesive plaster.....	1	1	0	0
Drainage tube inserted into wound of entrance.....	1	1	0	0
Incision to remove contained pus. Drainage.....	1	1	0	0
Drainage tube along entire track of wound.....	2	2	0	0
Removal of fluid in peritoneal cavity. Drainage wounds of entrance and exit by gauze.....	1	1	0	0
No operation employed.....	4	0	4	100

Method employed.	Recovered.	Died.	Mortality, per cent.
Gauze tampon.....	5	8	61.5
Cautery.....	2	2	50.0
Sutures.....	15	7	31.1

The mortality, respectively, of treatment by suturing and tamponing (the two most popular methods), as deduced from the aggregation of cases so treated in this and the preceding table, is as follows:

Method employed.	Number of cases.	Recovered.	Died.	Mortality, per cent.
Gauze tampons.....	17	6	11	64.7
Sutures.....	46	32	14	30.4
Average mortality of the two methods.....				38.1

Edler deduces the general mortality of liver wounds in 543 cases (no treatment specified), as 66.8 per cent. It is probable that in some of these either the hepatic wound was not treated or was complicated by injuries to other viscera. Mayer finds that the mortality in 61 cases of gunshot wounds which he studied is only 34.4 per cent. Otis, in the "Medical and Surgical History of the War of the Rebellion," mentions 173 cases of gunshot wounds of the liver. His data may be presented thus:

¹ In one of these cases (which terminated fatally) Paquelin's cautery was employed after the sutures tore out and before the wound was tamponed.

Nature of injury.	Number of cases.	Recovered.	Died.	Mortality, per cent.
Liver injury dominant.....	59	25	34	56.9
Other organs also injured.....	114	37	74	64.9

Thus it would appear that liver wounds should be treated by suturing, but undeniably there are many cases in which this method is impracticable and treatment by tamponing or the cautery is the only resource. There are many factors influencing the treatment of any given case which are not brought out in sufficient contrast in tables, and the aggregation of cases which differ in a vast number of essential details but agree only in one will leave great opportunity for error if the deduced statistics are referred to as conclusive. Only from very large tables, containing cases representing a great variety of conditions, can a really fair estimate of the comparative values of different methods of treatment be obtained; for in these the characteristics which are peculiar to each case cancel each other in the aggregate. But, as in the present instance, in which one method shows little more than half the mortality of another, there cannot be much hesitancy in arriving at a conclusion in its favor. Hence, in the *average* case of penetrating wounds of the liver sutures should be given the preference, but instances will be found in which sutures alone are insufficient.¹ Cauterizing alone has little effect upon hepatic hemorrhage because of the extreme tenuity of the vessels and the great vascularity of the organ. The larger vessels are more harmed than benefited by contact with the cautery; they should be ligated separately, but if they are inaccessible and bleeding freely it is best to tampon the wound. The mortality of this procedure is high, but it is less than that of other methods under the same circumstances. It is this class of wounds, generally caused by a bullet, that gives to the gauze tampon-treatment such a high mortality. If the wound is suitable for the insertion of sutures, they should be introduced at some little distance from the edge ($\frac{1}{3}$ to $\frac{1}{2}$ an inch) and must not be drawn tighter than merely to cause contact at the site of the hemorrhage.

In all cases the operation should be performed at

¹ Clementi ("Immediate Ligation of Vessels in Wounds of the Liver," Roma, 1892) seared the bleeding surfaces of the wound, ligated the larger bleeding vessels separately, and sutured the wound. Hemostasis was perfect. He also obtained excellent results from compression with tampons alone, and found that in very deep wounds they acted better than sutures, being in more exact contact with the bleeding surfaces. If bleeding is from a deep vessel the sutures in the lips of the wound cannot hold the bleeding points of the wound close enough together to permit them to act as autoplastics. If the larger vessels are ligated cauterization can well be dispensed with.

the earliest possible moment. As with injuries of other viscera, the two most important factors which determine the time of operation are shock and hemorrhage. It is not advisable to operate until the patient rallies perceptibly from shock; to do so would be merely to pile Ossa on Pelion; but because of the sometimes continual uncontrollable oozing of blood from the wound, and the increase of capillary hemorrhage as the heart becomes stronger, it will be well to operate while the patient is in a condition which might be regarded as hazardous in the case of many other major operations. The usual restoratives should be administered, and to check this free hemorrhage until the time of operation, gauze should be introduced at the earliest moment and, when possible, packed into the wound. The hemostatic effect of this treatment is excellent, and the patient will be in a much better condition at the time of operation than if other anticipatory measures are employed. Before, during, or after the operation, when all bleeding has been checked, transfusion will often save the patient's life.

Babacci ("Elastic Sutures of the Liver," Pansula, 1889), from a long series of observations on dogs, concludes that the only treatment justifiable in cases of wounds of the liver is suturing, but so broad a conclusion is unwarrantable. One suggestion that he makes is excellent, *i. e.*, the employment of an elastic suture; it is to be sanctioned for many reasons: (1) It is perfectly supported by the animal tissues and the part of the liver which encapsulates it. (2) It can be threaded in a needle smaller than its own diameter by cutting it obliquely. (3) It enters the wound in the hepatic capsule with facility (if a round needle be employed) because its elasticity renders it slender when it is drawn through the tissues, and when traction stops it thickens and perfectly fills up the hole through which it has passed. (4) Unlike other threads, it does not rub or saw in its passage; it lacerates less and passes more easily, and is less liable to cut its way out. (5) In the liver, an organ subject to great normal oscillations in volume, the elastic suture causes less tension than does any other, for it yields before congestion, yet holds the surfaces apposed when the organ shrinks. These two last facts are the ones which compel its use to be sanctioned. Elastic sutures should never be fastened with knots, but the ends should be doubled over upon themselves about $\frac{1}{2}$ cm. and tied with silk or fine catgut, while held close to the edge of the tissue.

Chinese Woman Doctor.—The Siang-Hu Hospital in Foo Chow, China, is in charge of a Chinese woman doctor—Dr. Hu King Eng, who received her medical education in the United States.

CLINICAL MEMORANDA.

CONGENITAL OCCLUSION OF THE RECTUM AND ANUS; REPORT OF A CASE SUCCESSFULLY OPERATED UPON THROUGH THE PERINEUM.

BY A. P. STONER, M.D.,
OF CAINSVILLE, MO.

THE rarity of congenital malformations of the rectum and anus renders a report of a case both interesting and profitable. In 16,654 births at the Dublin Lying-in Hospital, Collins¹ observed but one case, and Zöhrer of Vienna found but two instances in 50,000 births. Wharton² places the average number of these malformations as about 1 case in 10,000.

At an early period of embryonic life the apertures of the primitive intestine are formed. Simultaneously with the formation of the nasal and oral cavities a depression occurs at the caudal extremity which deepens into a pocket, and this finally connects with the gut to form the rectum and anus. Should there be an interruption of this process, and a failure of communication between the two pouches, an occlusion of the rectum or anus, or both, results. A thin membrane only may exist between the outer cul-de-sac and the caudal pouch at birth, there being an appearance of a normal opening. Other cases present a depression at the anal site and the rectum ends high up, the intervening space being filled with cellular tissue. In other cases of malformation the rectum is found low down, being occluded only by a diaphragm of well-formed skin.

Cases have been noted in which there was an entire absence of the rectum. The bowel sometimes communicates with the vagina, bladder, or urethra. A few cases also have been reported of congenital narrowing of the rectum without complete occlusion, and Wharton refers to a case reported by Amussat in which the anus was well-formed, but communicated with the vagina, while the rectum ended in a cul-de-sac.

Given any of the above conditions, the question arises as to what, if anything, should be done for its relief. Matthews, in his excellent work on "Diseases of the Rectum," takes a decidedly pessimistic view of operative interference, and cites Cripps to substantiate his opinion. He says: "It has been seriously discussed by intelligent people whether life is worth living at the best. Surely, under the conditions which would exist after either one or the other of the operations suggested for such malformations, life would be anything but worth living." On the other hand, there are a number of well-attested cases of cure after operation, the patients enjoying useful lives, and I believe the general consensus of opinion among our best surgeons is that the operation is always justifiable. Cripps has collected reports of 100 cases in which an operation has been performed, with a mortality of but fifty per cent. When we consider that these patients were operated upon in pre-antiseptic days, there is little reason to doubt that under our present perfected aseptic technic better results may be obtained. These patients, if left

alone, die either from peritonitis caused by rupture of the bowel or from general marasmus.

But two operations for the relief of these malformations are now recognized, *viz.*, incision through the perineum (the rectum being brought down and attached to the natural anal site), and left inguinal colotomy. Authorities are now well agreed that preference should always be given to the perineal operation, and I am under the impression that it is possible to reach the gut by this route in the majority of cases. In substantiation of this assertion, Lanphear¹ has reported the case of a patient successfully operated upon in this way, there being a total absence of the upper rectum. "An incision was made through the sphincter to the coccyx, and the dissection carried through the connective tissue to near the promontory of the sacrum. A small sound was inserted in the bladder as a guide, and after dissecting upward for an inch and a half the peritoneum was reached. This was cut into, and the sigmoid flexure of the colon easily pulled down and stitched to the upper end of the rectum, an opening three-quarters of an inch long being made in the side of the bowel, with a discharge of an immense amount of feces. There has been no fever and no peritonitis, and the child is well and growing nicely."

In preparing for operation through the perineum the left groin should also be prepared, so that in case the gut is not reached by the former route, a colotomy may be performed.

In the report of the following case, which occurred in my own practice, I include the technic of the operation in full:

On June 10, 1896, at 7 A.M., Mrs. L. gave birth to her first child, a male, weighing 7½ pounds. After the child was given to the nurse it was noticed that the right ear was rudimentary, it being about one-third the size of the left. This led to a further examination, which resulted in the discovery that there was a total absence of the anal orifice. There was nothing whatever to mark the original intention of Nature—no crease, not even a raphé dividing the nates, the whole buttock being one firm, smooth, rounded mass, giving the impression of solid muscular tissue beneath the skin.

Operation being decided upon, the child's body was at once thoroughly scrubbed with soap and warm water, bathed with a 1 to 1000 mercuric bichlorid solution, and afterward wiped dry with sterilized gauze and enveloped in a thin layer of corrosive sublimate cotton, 1 to 2000, held in place by a bandage. The child was brought to the operating-room at 2 P.M. and was again thoroughly scrubbed with green soap, and afterward rinsed with sterilized water, after which it was rubbed with a wad of sterilized gauze saturated with alcohol, the belly and perineal region receiving especial attention. It was again rinsed with a 1 to 1000 bichlorid solution and laid upon a pad of sterilized towels on the operating-table. But a few drops of chloroform were inhaled at the beginning of the operation—only enough to blunt sensibility while the incision was being divided.

With the patient in the exaggerated lithotomy position,

¹ "System of Midwifery," page 509.

² "American Text-Book of the Diseases of Children."

¹ "American Text-Book of Obstetrics."

an incision was begun near the scrotal margin of the perineum and carried back to the tip of the coccyx, keeping as nearly as possible to the median line. This was cautiously deepened, and after a depth of three-quarters of an inch had been reached it was prolonged backward along the left margin of the coccyx, and the dissection made to hug the sacrum, in order to avoid wounding the bladder. I now exchanged the small scalpel I had been using for a medium-sized tenotome, reversed the cutting edge, and gradually separated the tissues with the back of the blade, alternately using the handle of the knife for the same purpose as the wound was deepened, the walls being held apart by retractors in the hands of an assistant.

When a point about $1\frac{3}{4}$ inches from the surface was reached, a slight bulging could be perceived when the child cried. As the dissection was deepened, the bulging became more and more perceptible. No chloroform was given after the primary incision was made, and the pain apparently was so slight that I felt almost tempted to resort to some additional means to cause the child to cry, for I found this to be a decided help in locating the gut. When a depth of about two inches was reached, the bowel was brought into view. There was nothing in its appearance, however, to distinguish it from its neighboring viscus—the bladder.

The handle of the scalpel was then used, in connection with my finger, to separate the gut from the surrounding tissue, and at each cry of the child it was made to descend nearer to the surface. The smallest-sized trocar and cannula was then introduced into the center of the bulging mass, to make sure that it was the bowel, and when the trocar removed there was an escape of gas of characteristic odor. The cannula was removed, and a pair of catch forceps applied to the bowel over the opening made by the trocar, thus effectually closing it and preventing the escape of fecal matter into the wound. Gentle traction was now made on the forceps while the adhesions were being broken up. After considerable manipulation the intestine finally was brought to the surface. While the forceps was still in position an incision one-half an inch in length was made into the bowel, and a very large amount of meconium evacuated.

The edges of the incision in the bowel were then stitched to the integument, four fine silk sutures being used on each side. The forceps being removed, the incision was carried forward one-quarter of an inch further, making the bowel incision three-quarters of an inch in length. This likewise was stitched to the integument, thus making six sutures on each side. The perineal wound was closed by deep and superficial sutures and sealed with iodoform-collodion. Iodoform gauze and plain cotton completed the dressing.

The child rallied nicely. Time of operation, fifty-five minutes, much time being lost in waiting for the meconium to escape. No hemorrhage was encountered during the operation, not an artery having been severed.

The following notes from my case-book show the progress and after-treatment:

June 11th. Wound dressed three times. Soiled by feces twice. Evening temperature 99° F. Nurses well

and appears to be doing well. Somewhat icteric. June 13th. Rested well during the night. Morning temperature 100° F.; nurses eagerly. Much annoyance is caused by the urine and feces infiltrating the wound. No indication of primary healing except in front of gut attachment. June 15th, 8 A.M. Temperature 104.5° F. Wound appears healthy. Rested badly during the night. Nurses poorly; 4 P.M., temperature 100.5° F. Appears to be improving. June 16th. Morning temperature 100° F. Slept all night. Icterus disappearing. Most of the rectal stitches have cut through but the gut has not receded more than a quarter of an inch. That part of the perineal wound posterior to the gut attachment having failed to heal, the stitches were removed, and the wound packed with gauze. Some tympanites present.

June 20th. Temperature normal. Icterus has disappeared. Primary union obtained anterior to the gut attachment. Posterior wound closing nicely, with healthy granulations. No tympanites. June 26th. Child doing well except for an occasional rise of temperature. July 6th. Has been suffering some from constipation and strains while the bowels are being moved. A trace of fecal matter was forced through the urethra. Wound has closed, and the opening in the bowel is being dilated daily with soft rubber bougies, there being a tendency to contraction, the opening having become somewhat rigid.

The patient passed from under my observation about November 1st, at which time bougies were being passed once or twice a week in order to prevent any undue contraction of the new anal orifice. There was a decided tendency toward constipation, principally owing to the carelessness of the attendants. The child was well nourished. The nates were distinctly marked and the anus presented a natural appearance. On several occasions a trace of fecal matter was passed by urethra, which indicated that the rectum communicated with the urethra or bladder. It seems highly probable, on account of the high situation of the rectal pouch, that the communication was by a minute opening into the latter. The child had full control over the sphincter, there being little or no incontinence five or six weeks after the operation. I am informed that the child is still well and doing finely, and has no incontinence.

ARTERIAL VARIX OF THE LOWER LIP, INVOLVING THE CORONARY ARTERIES: EX-TIRPATION UNDER COCAIN ANESTHESIA.

By RUDOLPH MATAS, M.D.,
OF NEW ORLEANS, LA.;

PROFESSOR OF SURGERY IN THE MEDICAL DEPARTMENT OF TULANE UNIVERSITY.

ACQUIRED aneurismal disease or varix of the coronary arteries must be a very rare condition when we consider the ample provision made by nature to prevent undue stretching of the arteries in this particular area. The arteries of the face, as we know, are normally tortuous and wavy, in order to allow for the continuous mobility of the face and the almost incessant exercise of the muscles which are brought into play in the formation of expression, in mas-

tication and in vocalization. The lips, in addition to being highly valuable prehensile organs, are indispensable in the exercise of many musical and other vocations. Of those that require the mastery of special instruments there are few which more seriously tax the muscular and circulatory apparatus of the lips, especially the more mobile lower lip, than cornet playing. In performing upon this instrument not only is a certain configuration and thickness of the oral orifice very desirable but almost necessary. The lips must adapt themselves to the mouthpiece of the instrument and not the mouthpiece to the lips. While playing, the lips are firmly compressed by the circular edge of the mouthpiece, and in this way the mucous membrane is gradually forced and prolapsed into the narrow funnel. By the combined pressure of the metallic rim and protracted constriction of the circular sphincter a condition of corrugation and puckering, followed often by slight edema of the projecting mucous membrane contained in the mouthpiece takes place, which is very striking to any one who will remember the appearance of the mouth of a cornet-player immediately after a long performance. This puffy and edematous condition is, in fact, necessary for effectual playing in some cases, and, if I am not mistaken in my information, it is cultivated by professional musicians, who often practice with the sole view of adapting their mouths to their work whenever any especially difficult performance is expected of them. Nevertheless, arterial disease of the lips as the result of cornet-playing is certainly a rare condition: at least I know of no instances similar to the one which I report herewith. I have made no special inquiry upon the subject, but numerous systematic writers whom I have consulted fail to mention arterial varix of the lip as a sequel to this or any other mode of labial exercise or traumatism.

During the summer of 1895 I was consulted by Mr. J. W., forty-two years of age, a professional cornet-player in one of our local theaters, on account of a peculiar pulsating swelling which affected his lower lip. About seven months before consulting me he noticed that his lower lip "throbbed" considerably after any long performance upon his instrument, and that the lip remained slightly swollen for some time after he had ceased playing. He did not pay much attention to this at first, but the throbbing became so persistent that it annoyed him. It was scarcely perceptible after a few hours' rest, but it always recurred immediately after playing. As there was no pain or positive evidence of inflammation he did not seek advice until he realized that the condition ultimately would disable him. When he consulted me his lip presented, externally, a perfectly normal appearance. Upon stretching the lip and examining its inner surface I recognized a slight elevation in front of the frenum labii, which pulsed very distinctly. By pressing the lip between the thumb and index-finger the existence of pulsation was confirmed and its area of distribution distinctly traced out toward the commissures. The cause of the trouble evidently was an enlarged coronary artery which was especially dilated at the usual point of anastomotic communication in the middle line. The enlargement at this point caused the usually

small and invisible coronaries to feel as large as the facial artery itself. The course of the dilated vessel could be distinctly traced in the submucous tissue by simply stretching the lip and passing the pulp of the finger gently over the surface. It was evident that it was the inferior coronary circle which was enlarged and that a few other collateral vessels participated in the dilatation.

I decided to cocaineize the lip and extirpate the dilated arteries. A 1-per-cent. cocain hydrochlorate solution (at that time the use of Schleich's weak solutions had not been introduced) was injected at the commissure of the lip and along the line of the pulsating vessels. Ice was applied and the infiltration edema allowed to subside. The lips were kept very tense by an assistant, who also controlled the blood supply. With a fine and very sharp scalpel the mucous surface was carefully incised on one side of the dilated vessel and the edges of the incisions raised with dissecting-forceps. In this way a tortuous and rather thick vessel was brought into view. A blunt hook was then inserted under it and the vessel was soon detached from its loose connective-tissue surroundings. By pulling on the artery its course was easily traced to each commissure and the overlying parts were cut with sharp-pointed scissors. Two collateral ramifications, also dilated, were followed on each side of the frenum and ligated. After removal, the chief artery curled up and contracted to about $1\frac{1}{2}$ cm., or one-half its original size. The vessel walls were unusually thick and were undoubtedly in a state of endarteritis. The incision required for the extirpation was readily closed by a few interrupted catgut stitches. The use of a mild antiseptic mouth wash and a weak peroxid of hydrogen spray was the only after treatment. The wound healed readily and the patient was advised not to play for at least two months. He has since resumed his regular occupation and has played during two winters in succession without experiencing the least inconvenience.

The interest in the case centers in the fact that this was an acquired or pathologic varix, not nevoid,—simply a dilatation of a distinct arterial trunk and a few collateral branches. It probably was associated with the special exercise to which the lip was subjected, and in this way differed essentially from the nevoid and other forms of congenital or acquired angioma which are so frequent in this region.

A CASE OF ACUTE OPIUM POISONING TREATED WITH OXYGEN, VENESECTION, AND HYPODERMOCLYSIS.

SERVICE OF DR. S. S. STRYKER, PRESBYTERIAN HOSPITAL,
PHILADELPHIA.

Reported by ALBERT E. BLACKBURN, M.D., Resident Physician.

W. F., male, forty-four years of age, was admitted to the Presbyterian Hospital June 26, 1897, with a history of having been found at his home in a deep sleep from which it had been impossible to arouse him. A three-ounce bottle, which had contained laudanum, was discovered in his room.

Upon examination the patient was found to be intensely cyanotic and could not be awakened. His pupils were

reduced to a pinpoint in size and did not respond to light. Respirations were reduced in number to nine every five minutes and were labored and stertorous. The breath bore a very strong odor of alcohol and a slight odor of laudanum.

A tube was introduced and the stomach thoroughly washed out with plain water, the first return of the fluid being brown in color and possessing a marked odor of laudanum. The viscus was then washed out a number of times with a 1 to 5000 solution of permanganate of potash, which, in turn, was followed by plain water. Three hypodermic injections of atropin sulphate, one-hundredth of a grain, were given in rapid succession, together with an enema of a strong infusion of coffee. Artificial respiration, the galvanic current, and the application of hot water to the epigastrium—all were tried, and a cone connected with a reservoir of pure oxygen was kept constantly over the nose and mouth. One hundred and forty gallons of the gas was used during the treatment.

Three hours elapsed and the condition of the patient had in nowise improved. It was then suggested that, as considerable absorption of the drug probably had taken place, the blood necessarily was surcharged with laudanum, and if good results were to be obtained this poisoned blood must be removed as far as possible and another circulating medium substituted. Accordingly twenty-five ounces of blood was removed by venesection and one and one-half pints of normal salt solution introduced in its place. As a result of this treatment, the cyanosis gradually disappeared, the pupils dilated and responded to light, and the respirations increased in frequency and became quiet.

The after-treatment was symptomatic. A soft, blowing systolic murmur, which had developed during the efforts made to resuscitate the patient, disappeared after forty-eight hours. It was afterward learned that the man had swallowed two ounces of laudanum two hours before his admission to the hospital.

MEDICAL PROGRESS.

Suture of the Popliteal Artery.—ORLOW (*Centralbl. für Chir.*, May 29, 1897) opened the popliteal artery during an operation, making a wound in it about one-third of an inch long. This was closed by five sutures, three of them passing through the whole thickness of the wall and two of them including merely the adventitia. Three days later, there was distinct pulsation in the arteries of the foot. It became necessary, subsequently, to amputate the limb, and the popliteal artery was found to be pervious, though somewhat narrowed at the point of suture. Orlow found it much easier to suture this artery than to suture those of an animal.

Softening of the Brain Following Ligation of One Internal Jugular Vein.—ROHRBACH (*Beiträge zur Klin. Chir.*, vol. xxvii, p. 811) describes a case in which softening of the brain followed ligation of the left internal jugular vein. A woman, aged fifty-seven, had metastatic nodules of carcinoma in the left side of her neck, which were found

at operation to be so closely attached to the internal jugular vein that the removal of a portion of this vessel was imperative. There was no return of consciousness after the effects of the anesthetic had passed off, but a comatose condition persisted and grew deeper, the reflexes being lost. Death followed six days after the operation. The autopsy showed extensive softening of the brain, due to retention within the cranium of venous blood. An explanation of this condition was found in the small caliber of the right sinus transversus, the lumen of which barely admitted a knitting-needle. Among ninety-one cases of ligation of one internal jugular vein which have been reported, not one presented a disturbance of circulation so serious as that which occurred in this instance. In nine there were transitory symptoms only.

The Microscopic Character of Adenoids.—BRINDEL (*Centralbl. f. Chir.*, May 29, 1897), in an examination of adenoids from sixty-four patients found tuberculosis eight times, although in only one instance did he succeed in staining the bacilli. The other growths which were considered tuberculous contained scattered caseous areas and a few giant cells.

Radical Cure of Perforating Ulcer of the Extremity.—CHIPAULT (*La Presse Méd.*, May 29, 1897) reports seven attempts to cure perforating ulcer of the foot by stretching of the plantar nerves, with only one failure. All of the patients were laborers, and the ulcerations were deep, and in some instances associated with osseous lesions. All were in bad hygienic condition. In every case the nerve was stretched either under the internal malleolus, or external malleolus, or at the border of the Achilles tendon; in a word, at a moderate distance from the trophic ulceration. At the same time that the nerve was stretched, the ulcer was thoroughly curetted, necrotic bone removed, and the thickened edges of the ulcer excised, thus transforming a round infected ulceration into an oval wound, whose edges were sutured together. In this manner the most obstinate cases may be successfully treated.

THERAPEUTIC NOTES.

Bromoform in Whooping Cough.—HOGE (*Virginia Med. Semi-Monthly*, May 28, 1897) has tested the value of bromoform in whooping cough in a number of cases, and concludes as to its therapeutic value, that it has absolutely no good effect in lessening the paroxysms or cutting short the disease. As to its dosage, he concludes that it should never be given on an empty stomach, and not at all to children under two months of age. For a child one year old, six drops four times daily is safe.

Medical Treatment of Pyelitis.—ROBIN (*Bull. Gen. de Thérapeutique*, April 30, 1897) advocates medicinal treatment of pyelitis, at least up to a certain stage. Attention should be directed toward the diet and hygiene, while of medicines, the balsams, revulsives, and especially mineral waters, are able to exert a favorable influence upon the disease. Every effort should be made to excite

the secretory action of the skin. The diet should be exclusively of milk if the patient is able to endure it. Of medicines, benzoic acid, or its less irritable salt, benzoate of soda, is the most valuable. It may be given in the following prescription:

℞ Benzoate of soda . . .	gr. xv-lx
Cherry laurel water . . .	℥ iv
Syr. of orange flowers . . .	℥ i.

To be taken in four doses during a period of twenty-four hours.

Under the influence of this medicine, there will be in the first few days a discharge of alkaline urates, which may possibly provoke renal colic. In conjunction with the benzoate of soda, balsams, like those of tolu, copaiba, styrax, turpentine, etc., may be employed. After this treatment has been continued for a few days there may be given in place of it, Haarlem oil, a preparation which contains, among other things, oil of cade, and laurel.

If acute symptoms manifest themselves, revulsive treatment in the form of slight cauterizations with the paquelin point, perhaps as many as seventy or eighty upon the affected side, will be found useful. Astringents, such as gallic acid, tannin, or above all, iodo-tannic syrups, are needed to counteract the relaxation occurring in this tedious disease. The mineral waters selected must not be those producing alkalinity of the urine. Moreover, they should be light in action and easily borne and digested. In long standing cases, chalybeate waters act favorably.

Constipation in Babies.—For constipation occurring in babies during the first year and not relieved by a regulation of the diet, CARRON DE LA CARRIERE recommends, in the *Revue de Therapeutique*, May 1, 1897, a light massage of the abdomen with the palm of the hand well oiled. The movement should be made in a circle about the umbilicus, pressure being light and exerted especially in the right iliac region. Each seance should occupy not more than ten minutes, and should take place in the morning. For babies after the first year, massage may be given with the finger tips over the course of the large intestine from right to left.

For Eczema Ani.—

℞ Powdered camphor . . .	2 parts
Zinc oxid . . .	} aa . . . 30 parts
Bismuth subnitrate . . .	
Talcum . . .	40 parts.

M. Sig. Apply after each movement, first washing the parts with boracic-acid solution.—*Ther. Wochenschr.*

Treatment of Nephritis by the External Use of Pilocarpin.—

JULIA (*Gaz. heb. de Med. et de Chir.*, June 27, 1897) gives the following directions for the use externally of pilocarpin in cases of nephritis:

℞ Pilocarpin nitrate . . .	gr. i
White vaselin . . .	℥ ii.

This ointment is rubbed upon the lumbar region and covered with cotton and oiled silk. If the perspiration is very profuse, the ointment may be removed after two hours, but it is better to leave it longer if possible.

The action of the drug applied in this way is surer, more rapid, and less dangerous than when given internally.

Hair Tonics.—These two "hair tonics" have much to recommend them, the first for its lack of alkalinity and bleaching tendency, the second for its combination of oil with alcohol.

(1)	
℞ Quin. sulph.	gr. xx
Ac. sulph., dil., ...	q. s.
Tinct. canthar.	℥ i
Hazelin	℥ ii
Glycerin	℥ i
Aq. Flor. aurant. q. s. ad	℥ viii.

(2)	
℞ Tinct. canthar.	℥ xiv
Tinct. cinchon.	℥ ii
Tinct. benzoin	℥ vi
Spts. lavand.	℥ iss
Ol. ricini	℥ ii
Alcohol q. s. ad	℥ x.

Dissolve oil in alcohol, and add other ingredients.

After a vigorous application, all excess should be dried off with a towel.—*Jour. Cut. and Gen.-Urin. Dis.*

Aristol in Operations upon the Nose.—COX (*Brooklyn Med. Jour.*) says that there is no better remedy for use in the nose after operations than aristol, which "adheres closely to abraded surfaces, when insufflated, acting as a protective and cicatrizing, deodorizing most effectually without substituting any odor of its own." It is especially valuable as a dressing after operations for hypertrophy of the turbinated bones, abnormalities of the nasal septum, removal of polypi, etc.

ANDERSON (*N. Y. Med. Jour.*) states that when insufflated upon cut surfaces aristol acts not only as an antiseptic, but adheres firmly and prevents the constant oozing of blood and serum from the wound. Furthermore, it reduces to a minimum any reaction occurring as a result of the operation.

The Relief of Confirmed Insomnia.—BROWNE (*Lancet*, May, 1897) states that even in cases of confirmed insomnia, which have been treated unsuccessfully by means of chloral, paraldehyde, and other hypnotics, each drug in turn having to be increased in dose until it finally loses all power or becomes dangerous, trional, in his hands, has afforded marked relief without apparent ill effect, and has given tranquil, refreshing sleep without any increase of the initial dose. One of the author's patients, a retired surgeon, a museum of complaints, having mitral insufficiency, gout, eczema, albuminuria, and marked emphysema, who had tried every known hypnotic for obstinate insomnia, has been taking 15 to 20 grains of trional during the last five months, almost every night. He has never had to increase the dose, his heart has been much benefited by the regular sleep, and his nocturnal attacks of dyspnea are now unknown. It is the author's custom to administer an initial dose of 20 to 24 grains, which usually may be reduced to 15 grains or less, and when given in this way he has found it invaluable for breaking a pernicious habit of sleeplessness where a few good refreshing nights may restore the normal habit of sleep.

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SATURDAY, AUGUST 14, 1897.

AN ABUSE DEMANDING THE ATTENTION OF THE BOARD OF HEALTH.

It is a notorious fact that there has developed in this city during the past year or two a series of low liquor dives whose nefarious practices involve a serious question of health. These dives are known vulgarly among the more aristocratic saloon-keepers as "morgues"—not *post-mortem*, but *ante-mortem*, morgues—for it is here that the fatal spirits are dispensed. It is currently reported that there are hundreds of such places in New York, where alcohol diluted with water and glycerin and other fatal concoctions are sold as pure spirits. As might be expected, these places are in poor neighborhoods in the densely populated parts of the city, and are patronized by depraved, needy, and dissipated persons of both sexes. Such patrons no longer get the expected response from an ordinary cocktail, and demand something of a more fiery nature and at a reduced rate. These morgues are, as their name implies, dismal places, from which all inducements to conviviality are excluded, and in which, therefore, the patron is not expected to tarry. One drink of the hot and venomous stuff is quite enough.

This is thrown down with a gulp, the requisite five cents is deposited, and the unthinking victim goes on his or her way in nervous haste or with languid step, as the case may be.

The moral influence of such an institution is not the point to which we wish to call attention, for that naturally comes more within the sphere of the police department or of the Church, but as sources of physical degeneration they invite the attention of the profession and more especially of the sanitary authorities.

Commercially, such places bear about the same relation to the legalized saloon that the bucket-shop bears to the Stock Exchange. They might justly be called the bucket-shops of the liquor trade, and, indeed, they have extended their business to such an extent as to attract the attention of the Wine and Liquor-Dealers' Association. The efforts of the Stock Exchange to suppress bucket-shops are inspired partially by the desire to overcome opposition and indirectly by a moral sense which aims to rescue the great mass of unthinking humanity, the newsboy, the messenger-boy, the bookkeeper, and the low-salaried clerk from the temptation to squander their small savings in an investment in which all the chances are against them. In the same way the Liquor-Dealers' Association, in its efforts to overcome the business competition of these morgues, is at the same time rescuing this low class of society from certain physical wreck and death. In this way, sometimes, the workings of natural and commercial laws will right many abuses, but in this instance it would seem that there is a legitimate field for the intervention of the Board of Health. If these *ante-mortem* morgues could pass on their victims direct to the *post-mortem* morgue, their influence upon the community might be considered beneficial rather than baneful, but the workings of the nefarious business is to fill the wards of the City's hospitals with patients suffering from gastritis, enteritis, cirrhosis of the liver, and a long train of inevitable complications, to be treated and nursed back into sufficient health to enable them to repeat their round of visits to the five-cent counters, and again appear in the hospital wards.

The Babies of Paris.—It is said that 18,000 out of the total number of children annually born in Paris are inevitably put out to nurse.

CANCER OF THE RECTUM.

IN a paper on this subject, read by James P. Tuttle of New York before the Chicago Academy of Medicine, January 8, 1897, the following facts are made clear: Of 487 excisions of the rectum for cancer, done before 1885 by the perineal method, 22.4 per cent. died from operation; of 512 cases done by the sacral method from 1885 to 1892, 20 per cent. died from the operation; while of 257 cases operated upon since 1892, most of them by the sacral method, 11.5 per cent. died from operation. The mortality for the future may, therefore, be counted as less than 10 per cent. It is less than this for the perineal operation and somewhat more for the sacral one. The former should, therefore, be chosen in all cases in which the disease is located sufficiently low down to permit of thorough and complete removal.

With regard to prognosis, nearly 10 per cent. of the 219 cases operated upon which could be traced, have passed three years without recurrence. As recurrence after that period of time is very rare, these patients may be regarded as cured. About 70 per cent. of the remainder have as yet had no recurrence in periods varying from a few weeks to over two years.

The outlook with reference to prolonged life is even more satisfactory. In the 219 cases traced, the average duration of life was, up to the time of report, two years and three months. As 181 of them were still alive it is evident that the average duration of life after the radical operation is considerably greater than this; and what is still more important, these patients are all sustained and cheered by the hope of cure until recurrence actually appears. The average duration of life without operation is about one year. After colotomy, even if the life is prolonged—a claim not yet made good by statistics—the patient has absolutely no hope of escaping the disease.

The most frequent cause of death after operation is shock, and the second in order, septic peritonitis. These two causes accounted for 17 out of the 31 deaths. The others were due to anemia, 3; iodoform poisoning, 2; exhaustion, 2; hemorrhage, 1; empyema, 1; cerebral complication, 2; unknown, 2; and suppression of urine, 1.

The lack of fecal control which must evidently follow if the sphincter is removed, may be avoided, at least temporarily, by Gersung's plan of twisting

the rectum before suturing it, or by bringing the rectum through between the fibers of the gluteal muscle—a method advocated by Jaennell and Willems.

As a palliative measure, excision is far more successful and beneficent than any other means of treatment. The writer can see no good grounds either in theory or practice for performing a preliminary colotomy. In order to avoid sepsis, he emphasizes the rule, "during operation keep your fingers out of the rectum, and do not open it until the peritoneum is closed."

This elaborate article must have required years of careful search and investigation into the literature of the subject, and is another indication of the amount of valuable information each specialty has in store for one who investigates it thoroughly.

ECHOES AND NEWS.

Lockjaw from a Gun-shot Wound.—A man recently died at Trenton, N. J., from lockjaw as a result of a gun-shot wound, accidentally received while out gunning.

The Oldest Doctor.—The oldest physician in the United States is Dr. Stephen Adams, aged ninety-four, who lives in West Newfield, Mass. He was graduated in 1828.

Lord Wolseley Has Cancer.—The report comes from London that Lord Wolseley, Commander-in-Chief of the British Army, is suffering from cancer of the throat, due, it is said, to excessive smoking.

Fatal "Mushrooms."—The family of a man living at Rockford, Ill., recently ate of what were supposed to be mushrooms. As a consequence one child is already dead and another is not expected to survive.

Lizards in His Stomach.—A young farmer of Lancaster, Pa., who has been ailing for some months, recently vomited up twenty-four lizards, many of them over three inches long, and a number of lizard eggs.

The Prince of Wales and the Medical Profession.—The Prince of Wales was unanimously elected an Honorary Fellow of the Royal College of Physicians of London at a recent meeting. He is the only Honorary Fellow of that institution.

The Foulard Library.—The library at the St. Louis Hospital, Paris, founded by Dr. Foulard, who perished in the Charity Bazaar fire, is to be named after him, and a subscription has been opened to collect funds to erect a bust to his memory.

Work of Female Convicts.—In England convicts are not allowed to become crazy from lack of employment. It is said that the female convicts of Woking prison did all the mosaic work with which the crypt of St. Paul's cathedral is paved.

Pure Water and Reduced Death-Rate.—It is said that there has been a great reduction in the death-rate from typhoid fever in Jersey City since the polluted water of the Passaic river has been exchanged for the pure water of the Highlands of New Jersey.

Death-rate in Model Dwellings.—According to the *London Chronicle*, the death-rate in the model dwellings put up by the Metropolitan Association for Improving the Condition of the Working Classes is only 9.64 in 1000—half the rate for the whole of London.

Dismissed the Staff.—A misunderstanding between two of the consulting physicians of the Bayonne (N. J.) Hospital and Dispensary has resulted in the dismissal of the entire staff. It is probable that the Board of Managers will re-appoint the members of the staff with one exception.

In Bed Thirty-Nine Years.—There recently died in England a woman aged seventy-seven years who had spent the last thirty-nine years of her life in bed, although perfectly well in every respect. She simply made up her mind that a bed was the most comfortable place in the world, and stayed there.

A Baby-Detective.—This is the name given to a young woman who is employed by one of the hospitals of New York City to "run down" the parents of sick babies which are left in that institution. The "baby-detective" became necessary, because many parents deserted their children after placing them in the hospital.

Suicide of Russian Doctors.—According to the *Lancet*, the many free and heavily endowed dispensaries in Russia are responsible for a large percentage of the many suicides among physicians of that country. Doctor's fees are generally very low in Russia, 20 kopeks (6 cents) being a not uncommon charge for an office consultation.

New Fireproof Building for a Pathologic Museum.—At the urgent request of Professor Virchow, a new fireproof building is about to be erected for the collections of the pathological institute of the Berlin Institute. These celebrated collections, containing many rare specimens, are now stored in a building which offers no protection against fire.

A Homeopathic Pharmacopœia for Germany.—The news comes from Berlin that a homeopathic pharmacopœia, which is to be officially recognized, is in course of preparation in Germany. The superintending committee, composed of homeopathic doctors, dispensing chemists, and a few university professors, held its first meeting August 11, 1897.

Asleep for Three Months.—Nebraska has a sleeping boy. He is fourteen years old and has always required more sleep than most boys of his age, often spending sixteen or eighteen hours in bed. For the last three months he has remained in bed altogether, during which time he has barely opened his eyes half a dozen times. Food in liquid form is forced into his mouth and swallowed.

Death of Dr. J. J. Curran.—Dr. John Joseph Curran of New York died on the 24th ult. of heart failure. His

brother, Dr. F. W. Curran, was lying dangerously ill in the same house and was not told of his death. The burial took place on the thirty-seventh anniversary of Dr. Curran's birth. He was a graduate of the College of Physicians and Surgeons of New York.

Patent-Medicine Man Fined.—Lord Nelson's old battleship, "Foudroyant," was fitted out not long ago as a Nelson museum and exhibitions given at various English seaports. An enterprising patent-medicine man one night caused to be painted on her side an advertisement recommending a certain kind of pill. At the Liverpool assizes he was fined \$260 for defacing the old battleship.

Italian Foundling Hospitals.—The appalling revelations of the mortality in these institutions have led to the nomination of a committee of inquiry into the whole subject—the illegitimacy which gives rise to the system of foundling hospitals, the provocatives of that illegitimacy, and the administration of the hospitals. The committee is composed of high medical authorities, members of Parliament, and other well known men.

A Medical Saint.—Of the two new saints recently added to the calendar by the Pope, it is interesting to note that one was a member of the medical profession—Saint Antonio Maria Zacaria, who was born in Cremona in 1503. Among other medical saints in the Roman calendar besides St. Luke, the "beloved physician," are two others, Saint Cosmos and Saint Damian. The old College of Surgeons (Saint-Côme) in Paris was named after the former.

Sanatorium Patients Injured.—Fifteen patients of the Loomis Sanatorium for Consumptives at Liberty, N. Y., were badly injured, some fatally, in a runaway accident recently. While descending a steep hill, one of the whiffletrees broke and frightened the horses, which dashed down the incline and overturned the wagon, throwing the occupants violently on the hard roadbed. Several of the least injured members of the party were seized with hemorrhage immediately after being picked up.

Rabies in American Dogs.—The recent order of the Board of Agriculture of Great Britain directed against the importation of American dogs into England, together with the numerous sensational newspaper articles on rabies which have appeared, has led the American Kennel Club to appoint a committee to investigate and report upon the existence of rabies in America. The various lines of investigation of the prevalence of this disease which have been instituted will eventually afford reliable data of positive information.

Death of Dr. John Love.—Dr. John Love of Montclair, N. J., died of heart disease on July 30th. His death was unexpected for he had not been ill. He was suddenly stricken just after completing a surgical operation and expired immediately. Dr. Love was born in Warren County, N. J., in 1833, studied in a private school and was graduated from Lafayette College, Easton, Pa., and the Medical Department of the University of New York. He entered the United States Army in 1862, and in 1863

was a brigade surgeon-in-chief in the Army of the Potomac.

Death of a Whale from a Curious Cause.—A white whale was recently brought to the New York Aquarium from Canadian waters, and died soon after from edema of the lungs, due to a strange accident. As is well known, a whale is obliged to come to the surface every ten or twenty minutes in order to blow and is provided with a blow-hole in which there is a valve which opens and closes as rapidly as the whale exhales impure and inhales pure air. An eel became lodged in this blow-hole and, despite the efforts of the whale to dislodge it, it held open the valve in such a manner that the water rushed in and filled the lungs, thus drowning the whale.

Death of Sir John Charles Bucknill, M.D., F.R.S.—The death on July 20th is announced of Sir John Charles Bucknill. He was born in 1817. In 1840 he took the degree of M.D. in the University of London with honors in surgery and medicine, and in 1844 was appointed the first medical superintendent of the Devon County Lunatic Asylum. Subsequently, he devoted himself to the study of mental diseases. He was one of the founders of the *Journal of Mental Science*, which he edited for many years. He was a voluminous writer. He became a fellow of the Royal College of Physicians of London, and in 1877 delivered the Lumleian lectures.

Pasteur Memorial.—The medallion, which was voted by the Municipal Council of Paris for the purpose of commemorating Pasteur's work, has been placed on the outer wall of the École Normal Supérieure. The medallion is of bronze with a gilded background. A rose-colored oak and laurel wreath surrounds it, the whole being placed on a black marble slab, which bears the following inscription:

"HERE WAS PASTEUR'S LABORATORY.

- 1857. Fermentations.
- 1860. Spontaneous Generation.
- 1865. Studies of Wines and Beers.
- 1868. Silkworm Diseases.
- 1881. Virus and Vaccines.
- 1885. The Prophylaxis of Rabies."

The International Congress at Moscow.—The reception of deputations by the Czar will be held August 17th (August 5th in Russia) in St. Petersburg. The deputation will consist of one representative from each country, the choice of representatives being left to the national committees of the different countries. The presentations will be made by Professor Skifosovski, the president of the Organizing Committee of the congress. The interest of the court in the congress is further shown by the offer of the Ministry of the Court to accommodate twenty-three members in the Maison des Cavaliers, one of the official residences in the Kremlin, where they will be treated in all respects as guests of the court.

Study of American Medicinal Flora.—The Pan-American Medical Congress, at its meeting held in the City of Mexico in November, 1896, took steps to institute a systematic study of the American medicinal flora through the me-

dium of a general commission and of special sub-commissions, the latter to be organized in the several countries. The sub-commission for the United States has been formed and has entered into an association with the Smithsonian Institution for the purpose of studying the medicinal plants of this country. This committee solicits information concerning the medicinal plants of the United States from everyone in position to afford it. All packages and correspondence on this subject should be addressed to the Smithsonian Institution, Washington, D. C., and marked on the outside, "Medical Plants for the United States National Museum." Franks which will carry specimens, together with descriptions and notes, free of postage through the mails, will be forwarded upon application. For further information address the Smithsonian Institution, Washington, D. C.

The Army Medical Board.—This board will be in session at Washington, D. C., during October, 1897, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the board will make application to the Secretary of War before September 1, 1897, for the necessary invitation, giving the date and place of birth, the place of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character, and habits. The candidate must be between twenty-two and twenty-nine years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the board. Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning November 1, 1897. Further information regarding the examinations may be obtained by addressing Geo. M. Sternberg, Surgeon-General, United States Army, Washington, D. C.

CORRESPONDENCE.

DEATH FROM DRINKING COAL-OIL.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: A report of the following unusual case may prove of interest:

On June 26, 1897, I was hurriedly summoned to attend a child, fifteen months of age, who, two hours previously, had drunk about four ounces of coal-oil. Immediately after the ingestion of the oil the patient had been given castor-oil, sweet milk, and vinegar, and then salt and water, which produced slight vomiting.

Upon my arrival I found the child unconscious, breathing heavily, and almost pulseless. Its skin was cadaveric in hue, pupils slightly dilated, and the lips, tongue, and throat swollen and blistered. I administered a small quantity of a saturated solution of alum as an emetic,

but as it was unproductive of results, I resorted to the use of stimulants and external heat. The patient died four hours after the accident occurred. An autopsy was not permitted.

I have been unable to find a report of a case similar to this, although in the United States Dispensary is contained an account of a man, who, after drinking petroleum, was saved by the prompt exhibition of emetics. I would like to know if there is any drug which will act as an antidote under these circumstances, and, in the treatment pursued in this instance, if the administration of the castor-oil and milk served to emulsify the coal-oil and thus hasten its absorption.

W. C. HAMILTON, M.D.

STEWARTSVILLE, MO., JULY 31, 1897.

UMBILICAL ASEPSIS IN THE NEWBORN.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: My attention recently has been directed to this subject by an article by Samuel W. Lambert, M.D., entitled "Umbilical Sepsis in the Newborn, Occurring at the Nursery and Child's Hospital, New York, During 1896," published in THE MEDICAL NEWS, May 1, 1897.

Applying the rules of general surgery, since 1893 I have eliminated after-treatment of the umbilical cord from my obstetric practice by amputating the cord at the umbilicus. After applying two artery forceps and severing the cord between them, the child is handed to the nurse. After completion of the third stage of labor, and after the necessary attention has been given to the mother, including suture of the perineum, if it has been lacerated, I return to the cord. My hands previously having been prepared, the field of operation is rendered sterile, the hemostatic forceps are moved up to the junction of the cord and the skin, the cord is severed close to the forceps, and the vessels picked up and separately ligated with small-sized catgut. Subgallate of bismuth and aseptic gauze are then applied and held in place by a cheese-cloth bandage. The wound heals under a scab, and is safe from infection.

In my next case I shall take a step forward by suturing the wound and sealing it with collodion. I will not claim originality for this method, for, although it is original so far as I know, I have not made an exhaustive study of the literature on the subject. I wish to suggest the general adoption of this as the best method of treating the cord, and would like to learn of any objection to its employment.

CHAS. E. B. FLAGG, M.D.,

Assistant-Surgeon, U. S. A.

FORT DUCHESNE, UTAH, July 20, 1897.

TAKING THE MEDICAL PROFESSION INTO PARTNERSHIP.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: The ways of the commercial physician are many and devious. The other day I came across a new one—or perhaps it is not new—in which you may be interested. A friend asked my opinion as to the advisability of presenting for censure to the County Medical Society the writer of a letter which he had received, and

the addressing of which to him he considered an insult. The question answered itself when we found that the letter-writer was not a member of the County Society. I append for the delectation of your readers some extracts from the letter:

"....."

"..... street,

"Philadelphia, Pa.

"....., A.M., M.D.,

"Editor and Publisher.

"..... 27th, 1897.

"DEAR DOCTOR: The Water Co. has placed in our hands a block of their capital stock for free distribution among the physicians of this city. The par value of each share is \$100, and the stock is full paid and *non-assessable*. The company is *now* doing a good business, and its stock is sure to become a very profitable investment. I have personally investigated visited the springs and . . . used the water, and I can say emphatically that it is as good as any water on the market. . . . There is *nothing to pay* for the stock; only investigate the merits of the water and, if satisfied, agree to recommend its use. The block allotted to Philadelphia is not large; and from present indications will be quickly disposed of, so that we must know soon who want it. I enclose a pamphlet that was prepared for circulation among the laity only. . . . This is, I believe, the only form of advertising which the company has yet employed. I am permitted to use my discretion in the distribution of the shares, and I will be pleased to have you refer to me any of your personal medical friends who might be glad of the opportunity to secure some of this stock. . . ."

What do you think of it all, anyhow?

Yours very truly,

SOLOMON SOLIS-COHEN.

PHILADELPHIA, July 20, 1897.

OUR VIENNA LETTER.

[From our Special Correspondent.]

PROFESSOR KARL TOLDT, THE ANATOMIST, AS RECTOR OF THE UNIVERSITY—THE FIRST WOMAN DOCTOR IN HUNGARY—AVAILABILITY OF LATENT NERVE FORCE AFTER INJURY AND DISEASE, WITH AN EXPERIMENTAL DEMONSTRATION—OSTEOPHYTOSIS IN THE PELVIS IN CASES OF ECLAMPSIA.

VIENNA, July 24, 1897.

DR. KARL TOLDT, Professor of Anatomy in the Medical Department of the University, has been selected as Rector magnificus of the Imperial Royal University during the scholastic year of 1897-98. He succeeds Professor Leo Reinisch of the Faculty of Philosophy, and the selection seems to be a source of very general satisfaction. The office is almost entirely an honorary one, and does not include what to our American ideas constitutes the main duties and responsibilities of the head of a university faculty. Financial matters, and all questions of modification of policy and establishment of new chairs and departments practically are in the hands of the Government.

Thus the yearly tenure of office is not beset with the difficulties it would have with us.

Hungary has not allowed herself to be long distanced by her sister kingdom, Austria, in the matter of conferring degrees upon women. The promotion to the doctorate in medicine, at Buda-Pest, of Countess Vilma Hugonay was recently announced. She is the wife of Dr. Vincent Wartha, the Rector of the Hungarian Polytechnic Institute in Buda-Pest, and has made her medical studies at various places in Germany and finally, like the Baroness Posanauer, the first woman promoted to the doctorate in Austria, at Zurich, Switzerland. This promotion, it is understood, will open up the Hungarian universities to women, as did the corresponding procedure here in Austria, and it is welcomed very enthusiastically by friends of the higher education of women.

A series of experiments performed after the removal of the cortical motor centers of an ape, which were recently carried out by Assistant-professor Biedl for Professor Stricker's lectures on Experimental Nervous Pathology, gave some interesting and unlooked-for results. Before operation the animal would always stretch out its right paw to grasp any dainty extended to it. After what was thought to be complete removal of the corresponding cortical center, and recovery from the shock of the operation, the left paw was always extended. During an interval of some weeks, while the animal seemed perfectly well otherwise, the right paw hung limp and motionless, and seemingly was without power. Then the cortical centers in the other hemisphere were excised. To the surprise of the experimenters after recovery from the operation the animal immediately began to use its right paw almost as well as before the first operation. There had been some awkwardness noticed after the first operation, seemingly until proper control of the left paw could be obtained by exercise, but after the second operation the right paw at once resumed all its old functions.

Autopsy showed that while it had been the intention at the first operation to remove the whole of the cortical area corresponding to the right paw, this purpose had not been accomplished and some of the peripheral parts of the area remained. The injury was sufficient to temporarily paralyze the motor paths to the right paw, and to make it more convenient for the animal to acquire by exercise more control of the motor paths on the other side, but as soon as this was interrupted by thorough removal of the corresponding cortical areas of the left side the use of the right paw was resumed.

The observations are of interest as showing how natural powers, when somewhat weakened by injury, faulty development, or pathologic process, may be held in complete abeyance, unless called forth by some special natural necessity or careful training. The experiments illustrate the principle that underlies certain lines of treatment for nervous affections which are just being developed, and should be a source of encouragement to the clinician studying such methods. The treatment of tabes by regulated exercise, and the teaching of coordinated movements, is a striking example of this bringing into play of nerve forces seemingly entirely destroyed by disease but

in reality only in abeyance because properly directed and persistent effort is not made to use them. Another such state of affairs is found in some of the spastic palsies of children in which American orthopedic surgeons, notably De Forest Willard, have accomplished much by properly setting the children on their feet, supporting them with suitable apparatus when necessary, and encouraging them in the effort to walk.

A striking example of this availability of nerve force, which under ordinary circumstances is latent, can be seen here in Vienna, in some of Professor Urbantschitsch's successes with deaf mutes. A certain number of congenital deaf mutes, by a series of regulated exercises in hearing, are brought to appreciate sounds which were completely beyond the range of their hearing at the beginning of the treatment. People with lessened hearing from nerve injury or disease in later life are often strikingly improved by practice. The whole subject of bringing out the capabilities of nerve force is an old and familiar one, being nothing more than the practice which is always indulged in when a complicated action is to be performed readily and easily, but this application of it to weakened nerves is only just being appreciated. Some experiments made with Parkinson's disease, and with senile tremors, show that these may be influenced in this way, and the further application of methodical exercises to certain other forms of nervous disease which run a slow course seems but a question of time.

An interesting case turned up in the autopsy-room the other day, which illustrates very well the completeness of the *post-mortem* section methods in Vienna. Death was due to pneumonia, but during the course of the autopsy a section of the liver showed the presence of remains of hemorrhages into the liver substance such as occur in poisoning from certain fungi, such as poisonous mushrooms, etc., and have recently been noted as occurring in eclamptic cases. In this case the bony pelvis was at once removed for examination. When cleared of all soft tissues it was found to weigh nearly three times as much as the normal pelvis under such circumstances, though the subject was only of medium size and development. After maceration, the increased weight could be seen to be due to hypertrophy of the bony structure, not leading to pelvic deformity, but filling up the interstices of the spongy, middle layer of bone and decreasing its translucency. It has long been a subject of general observation that osteophytes in the skull are found in many, even in most cases of eclampsia, but their occurrence in other bones has not been noticed so frequently. Here, however, they are found in nearly all cases to a greater or less degree and sometimes, as in this instance, are discovered when the clinical history says nothing of eclampsia, but where the irritant action of the eclamptic toxins has written the history of its presence in indelible signs in the bony skeleton of the patient. Whether some such bony changes will now be found in cases of mushroom poisoning, which possess certain similarities to eclampsia in the other *post-mortem* findings, is an interesting question. As the process usually is an extremely acute one it may be that they will not be demonstrable.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

ACUTE ASCENDING PARALYSIS OCCURRING DURING TREATMENT FOR RABIES—BILATERAL RESECTION OF THE LARGE CERVICAL SYMPATHETIC NERVE FOR EXOPHTHALMIC GOITER—ANEURISM OF THE AORTA MUCH IMPROVED BY INJECTIONS OF GELATIN—MULTIPLE PNEUMOCOCCIC SYNOVITIS—GASTRIC DILATATION IN INFANTS—SIMULTANEOUS OCCURRENCE OF TUBERCULOUS MENINGITIS AND TYPHOID FEVER—ETHER IN UREMIC DYSPNEA—A SUPERNUMERARY URETER.

AT the session of the Academy of Medicine, held June 15th, RENDU described *an acute ascending paralysis occurring during antirabic treatment*. On March 19th, last, a man entered the Necker Hospital suffering from hydrophobia, and died the same evening. The following day, at autopsy, a boy employed in the institution pricked his finger. The wound was treated antiseptically and gave no evidence of inflammation; nevertheless, at the advice of friends, he went to the Pasteur Institute for a course of treatment. From March 22d to April 1st he received sixteen injections of about forty-five minims each. On the 11th day of treatment he experienced a slight chill and a general feeling of fatigue; on the following day, there was painful tingling in the legs, with numbness, lumbago, and fever. On the thirteenth day he awoke with almost complete paraplegia, with anesthesia, from the umbilicus downward. It was still possible for him to pass urine voluntarily but in the evening of the same day this power also was lost. On the fourteenth day the thoracic region began to be affected, and on the fifteenth the arms were the seat of the same symptoms which had at first attacked the legs. On the sixteenth day the heart-beat was much increased and with it appeared a feeling of dyspnea and thoracic pain. The zone of anesthesia was now up to the nipples, and the movements of the head were beginning to be affected. This marked the climax of the paralysis, the ascension of which occupied six days. After nineteen days all of the marked symptoms had disappeared, but the convalescence extended over a period of six weeks.

The question arose whether this paralysis might not have been due to hydrophobia. This hypothesis was rejected for several reasons: First, its onset was too sudden; fourteen or fifteen days is regarded as the minimum of the period of incubation. In this case, however, on the eleventh day there were marked symptoms. Second, the character of the symptoms and the course of the disease did not correspond to those of rabies. Third, death almost invariably follows rabies of a paralytic type. On the other hand, the analogy existing between this case of paralysis and those acute ascending paralyzes of toxic or infectious origin is very close indeed. An objection to this theory lies in the fact that recovery began while the injections still were being given. Rendu, therefore, is of the opinion that the patient reacted with unusual sensitiveness to the introduction of a toxin which for most people possesses no virulent properties.

ROUX called attention to the fact that of 19,000 per-

sons who have received antirabic treatment at the Pasteur Institute, only two have developed paraplegia, that is, one case in about 10,000. Further, no one has been able to produce paraplegia in rabbits by the injection even of very large doses of the antirabic toxins.

GRANCHER regarded the case described as one of hysterical paralysis.

At the session of June 22d, LAMCEREAUX presented a patient, aged forty-six, who for two years had suffered from *an aneurism of the transverse portion of the arch of the aorta*. It was constantly growing and perforation was feared. On January 20th, 1 $\frac{3}{4}$ ounces of a solution containing one per cent. of gelatin and .1 per cent. of chlorid of sodium were injected subcutaneously in the left buttock. This caused a local redness and a temperature of 100.5° F. On the following day the tumor was slightly smaller and more solid. An injection of five ounces was made three weeks after the first one without local or constitutional disturbance. Afterward, twelve similar injections were made, with the result that the tumor became hard and small, while expansile pulsation disappeared entirely.

At the session of June 29th, GERARD-MARCHANT showed a patient upon whom *both the cervical sympathetic nerves had been resected for exophthalmic goiter*. The operation was performed about one year after the onset of symptoms, and the nerve on each side was dissected until its attachment to the large superior cervical ganglion was evident in order to be certain of its identity. About two inches of the nerve on each side was removed. The immediate result of operation was excellent. Four days afterward, exophthalmia, goiter, and tachycardia had all disappeared. Unfortunately this result was not permanent, and in a short time the exophthalmos, which had been the principal symptom, in part returned.

At the session of the Medical Society of the Hospitals, held June 11th, WIDAL and MERCIER mentioned *a case of multiple synovitis occurring in a man after an attack of pneumonia*. It developed successively in the right tibiotarsal articulation, in the sheath of the peroneal tendons, in the prepatellar bursa, in the right shoulder-joint, and finally in the sheaths of the extensor tendons of the right forearm. Pus drawn during life contained an almost pure culture of the pneumococcus. At autopsy, the synovial membranes showed only superficial alteration, consisting in desquamation of the endothelial cells, vascular congestion, hemorrhagic foci, and infiltration with leucocytes. Cases of generalized synovitis following pneumonia are rare, and this instance is worth recording.

At the session of June 18th, COMBY, who has measured at autopsy the stomachs of eighty infants, found dilatation to be present in eighty per cent. The retention of nourishment leads to abnormal fermentation, to putrefaction, and finally to an actual poisoning. To combat this auto-intoxication, it is necessary to modify the diet, and, finally, if this does not suffice, to have recourse to lavage of the stomach, which is very well tolerated by infants and is easily performed.

CHANTEMESSE mentioned a case of *tuberculous meningitis in which the serum taken on several occasions showed agglutinating reaction*. At autopsy there was

found a well-marked tuberculosis of the meninges and lung, while in the intestine Peyer's plaques were ulcerated and contained Eberth's bacilli. This patient was attacked by tuberculous meningitis and at the same time by typhoid fever. The symptoms of the former obscured those of the latter.

At the session of June 25th, LEMOINE reported the result of investigations to determine whether *the virulence of Löffler's bacillus corresponds with the clinical picture of the patient from whom it is obtained.* This query is answered in the main in the negative. Thus, in three cases of severe diphtheria, the bacillus showed itself possessed of a limited degree of virulence, while streptococci and coli bacilli from the same throat possessed considerable virulence. In order to determine the proper time for therapeutic intervention it is thus necessary to rely upon clinical observation in cases of sore throat. Bacteriology can do no more than indicate the mode of intervention. It is only in light and doubtful cases in which bacteriologic examination is necessary.

At the Biological Society, June 12th, LEMOINE and GALLOIS mentioned the success which follows *treatment of uremic dyspnea with large doses of ether* in case the kidneys are not absolutely destroyed. Thus in the uremia of acute nephritis, of renal congestion, either acute or occurring in the course of chronic nephritis, or infectious nephritis, treatment by ether gives the best chance of recovery. Uremia due to a slow disorganization of the kidney by arteriosclerosis is the only form which does not yield to this treatment. Every half hour or hour, according to the case, two or three teaspoonfuls of ether should be given in a little sweetened water. It is better still if every third dose is given subcutaneously, one half of a teaspoonful being sufficient when employed in this way. Some patients take with advantage as much as ten ounces of ether without the least inconvenience and without any symptoms of intoxication. The drug produces in these cases an abundant diuresis, relieves the pulse, and calms the respiratory spasms.

At the session of the Surgical Society of June 16th, ALBARRAN reported a case of *supernumerary ureter opening into the vagina and vulva.* The patient was a girl of twenty years, who had been troubled since birth with incontinence of urine, although she passed water at intervals by the urethra just as a normal person does. Examination showed the presence of several small openings posterior to the meatus both inside and outside of the hymen, from which urine trickled continuously. Cystoscopic examination showed the openings in the bladder of two ureters, and the passage of a fine bougie for eight inches into the vaginal fistula showed that there was no connection with the bladder. The urine passed by the fistula was found upon examination to contain a diminished quantity of chlorids, phosphates, and urea, as compared with the vesical urine, thus showing it to come from a hydronephrotic kidney. An attempt to transplant this supernumerary ureter into the bladder failed on account of the giving way of some of the vaginal sutures. A second attempt, after which a catheter was allowed to remain in the bladder for twenty days, was entirely successful.

SOCIETY PROCEEDINGS.

HARVARD MEDICAL SOCIETY OF NEW YORK.

Stated Meeting Held May 22, 1897.

The President, J. WINTERS BRANNAN, M.D., in the Chair.

STRIPPING OF THE SEMINAL VESICLES FOR NOCTURNAL POLLUTIONS.

DR. FOLLEN CABOT presented a case of seminal vesiculitis. The patient was twenty-two years of age, and had been treated by him since last August. He came complaining of nocturnal emissions of which he had had, at times, two or more during one night. He had masturbated about four years ago, but the emissions had continued after he had discontinued the practice. He was extremely depressed and suffered from insomnia. He never had had any venereal disease. Rectal examination showed the vesicles to be enlarged, the right one particularly. Dr. Cabot had begun stripping the vesicles very lightly, but afterward had done it with more force. Soon after the first stripping the emissions became less frequent, and under general tonics his health improved. After each stripping there had been a very marked feeling of relief. On emptying the vesicles, and having the patient pass urine, there would be found, as a rule, a heavy deposit. At the present time, the vesicles are nearly normal, and the sediment quite scanty. The stripping had been usually carried out at intervals of about a week. The patient had been treated by medicines and by the use of sounds, but without benefit. The marked improvement in his nervous symptoms was exceedingly gratifying. At present, emissions occur at intervals of a week or two.

DR. F. R. STURGIS said that the case was evidently one of pollutions, and not at all one of spermatorrhea. It is in these cases that nervous symptoms usually predominate. Quite possibly the vesiculitis came from an extension of the inflammation from the prostatic urethra. The case was of special interest in connection with the paper which he was about to present. The cases of daily pollution are very difficult to distinguish from true spermatorrhea. It was unfortunate that no microscopic examination had been made of the strippings. Some physiologists are inclined to believe that the vesicles themselves have something to do with the formation of spermatozoa. It is possible that their presence in the vesicles may account for those exceedingly rare cases in which impregnation has followed shortly after the removal of the testicles.

DR. FREDERICK R. STURGIS then read a paper on
SPERMATORRHEA.

He said that formerly the term had been used to designate every species of seminal loss, whatever the cause. This he considered a mistake. Almost all cases of genuine spermatorrhea occur without any preceding nocturnal, or diurnal pollutions, and its origin can only exceptionally be traced to such pollutions. He offered the following definitions:

Diurnal pollutions are those instances of seminal loss which are attended by a certain amount of erection, a slight degree of orgasm, with sexual feeling, ejaculatory spasm, and a genuine emission, of which the patient is conscious. On the other hand, in spermatorrhea, there is no erection, no orgasm, no consciousness of emission, and no sexual feeling; all that he is conscious of is that his urethra leaks, more particularly at stool. Riding over a rough road, or rapid running may produce an emission, but this is not the case in spermatorrhea. In spermatorrhea, there is a pronounced dilatation of the mouths of the ejaculatory ducts.

The causes are principally: (1) Mechanic pressure; (2) inflammation extending from the deep urethra to the ejaculatory ducts; (3) inflammation of the prostate gland and vesiculæ seminales; and (4) affections of the nervous system. One of the best known and time-honored causes is thought to be the pressure due to straining and the passage of hardened feces. He was inclined to believe, however, that seminal loss is due rather to the forcible pressure made by the abdominal muscles, as the vesicles are not situated in a position which renders them liable to pressure from masses in the rectum. In the class of cases due to extension of the inflammation, the origin is usually onanism, or "withdrawal," sexual excess, and the use of irritating injections in the urethra. Inflammation of the prostate gland and seminal vesicles he believed to be an infrequent cause of spermatorrhea. When a discharge occurs in these cases it is found to be devoid of spermatozoa, and to possess the characteristics of the prostatic juice. Affections of the brain and spinal cord sometimes produce spermatorrhea. He had seen cases in which he could assign no other cause for the spermatic difficulty than a chronic myelitis, although he was free to admit that many cases are due to a local, and not to a general cause. When the nervous system seems to be at fault, the patients are not aware of the existence of spermatorrhea, but consult the physician because of a peculiar feeling of nervous depression after going to stool. These patients usually give a history of nocturnal incontinence of urine. It should be remembered that spermatorrhea sometimes occurs in persons perfectly healthy, and who are entirely unaware of the existence of such a disorder. He was inclined to believe that it is a more common occurrence than is generally supposed. He felt confident that the loss of semen is not the debilitating thing it is usually believed to be; he had seen it repeatedly in persons in robust health. He was incredulous regarding the occurrence of spermatorrhea as a result of continence. Spermatorrhea rarely occurs before the age of fifteen years. When the disease is of long continuance the semen becomes thin and watery, and the spermatozoa become imperfectly developed, and their motility much impaired. Shreds and vermiform bodies are not infrequently found in the urine. These shreds are pieces of mucous membrane which have been stripped off from the urethra, and have no necessary connection with spermatorrhea. They are found in other cases in which there is congestion of the mucous lining of the urethra. Sometimes hyalin cylinders will be found. They are to be distinguished

from hyalin casts from the kidney by the fact that they are about double the width of renal casts.

The symptoms are extremely variable. As a rule, the first symptom is a slight, sticky discharge after stool or urination, usually containing some spermatozoa. The nature of the discharge can only be determined by several microscopic examinations. The other symptoms are pain in the back, burning in the eyes, a feeling of drowsiness, and a nervous chill at the time of the seminal loss. When such symptoms are present, the physician should examine several specimens of urine, taken at different hours during the day, particularly after stool. His experience had taught him that persons suffering from spermatorrhea do not exhibit any loss of memory or intellect. The sexual powers are not necessarily affected. The majority of patients recover perfectly.

The successful treatment of this condition naturally depends largely upon the removal of the original cause. The use of tonics is often of service, and much benefit follows a careful restriction of diet, and the avoidance of irritating cathartics or clysters. The local treatment is of the most importance, and consists in the introduction of cold sounds, and allowing them to remain for some time in the urethra. He had found that little or no benefit results from the uses of instruments to be worn by the patient.

DR. S. ALEXANDER said that the definitions propounded by the reader of the paper narrows the subject very much, and while he was not yet disposed to accept them unreservedly, it seems to him to be a step in the right direction. At the present time, there is a tendency to confound sexual neurasthenia and local causes. He was glad to hear the statement made, that seminal loss *per se* is not harmful—he had long been of that opinion. It was very clear to him that there is no such disease as spermatorrhea; it is rather a symptom of different conditions of the urinary tract. From a clinical standpoint he felt positive that when there is seminal loss there is disease, not only of the prostatic urethra, but of the seminal vesicles, and that without disease of the seminal vesicles there is no spermatorrhea. His experience had taught him that antecedent to all seminal losses of this kind there exists a constitutional defect; in other words, spermatorrhea does not occur in a normal, healthy man. In a neurasthenic who has practised masturbation or unnatural sexual intercourse, the spermatorrhea is as much due to the neurasthenic condition as to the local condition. He was doubtful about giving a favorable prognosis in the vast majority of cases of true spermatorrhea. This was based on his personal experience, although he was aware that it is opposed to the general opinion. The cases which recover as a result of local treatment alone are exceedingly few. A person with true spermatorrhea requires careful treatment in order to restore his nervous system to a normal condition.

With regard to stripping the seminal vesicles in cases of true spermatorrhea, the speaker said that he believed it undoubtedly gives immediate relief to the symptoms; that when given with an assurance that there is to be a marked benefit, the patient's mind is set at rest, and as a

consequence, his nervous and mental condition improves. He believed, however, if the stripping is done without holding out such encouragement, this local treatment will only be of temporary benefit. He had not been able to give this assurance to his patients, and he had not had as good results as had been obtained by Dr. Eugene Fuller.

Dr. Alexander objected to leaving sounds in the urethra for twenty or thirty minutes, for he believed that all the beneficial effect can be obtained by the simple passage of the instrument into the deep urethra. The prolonged retention of the sound in the deep urethra, he was sure, produces extreme congestion—just the condition which should be avoided. For this reason, he believed that the stronger applications of silver to the deep urethra are harmful, and that the milder solutions, given more frequently, accomplish better results.

DR. RAMON GUITERAS said that he shared very much the same views as the last speaker. He had always considered spermatorrhea to be a disease in which there is a leakage of fluid containing a great many spermatozoa. Prostatitis, he considered to be a condition associated with a chronic prostatitis, the formation of exudate in the prostatic urethra, and the expression of this exudate, usually on straining at stool.

He then referred to some cases of spermatorrhea occurring in his practice. He said that some months ago a pale, sallow man had come to him complaining of a leakage from the urethra during work, and during urination and defecation. The urethra was found to be normal, and so was the urine. The prostate appeared to be normal. The man was treated with very hot rectal irrigations, and hot solutions of nitrate of silver in the urethra (1 to 16,000). Laxatives and tonics were also used. In two months the leakage had practically ceased. Another case was that of a man in robust health who, about eight months before coming to him, had noticed a leakage when in company with women, although he was able to have satisfactory sexual intercourse. The urethra was found to be normal, the urine clear, and the rectal examination negative. He received prostatic irrigations of hot, weak solutions of nitrate of silver, and in a month was perfectly well. Another case was that of a neurasthenic man who complained of seminal losses during the past two years, following a urethritis. Examination showed urethral stricture and shreds in the urine. The strictures were dilated and the urethra injected with silver solutions. He was well in three months.

DR. EUGENE FULLER said that he did not think the classification of sexual disorders given in the paper was at all satisfactory. The investigation of sexual disorders by repeated microscopic examinations of the urine and discharges seemed to him very unsatisfactory. The term "spermatorrhea" should be placed in the same category with "brain fever"—it should be discarded. This disease has never been placed on a definite pathologic basis, but upon a symptomatic basis. Whatever results he had been able to obtain in these cases had been from the faithful carrying out of a particular method, and not at all from hypnotic suggestion or faith cure. The finger of the surgeon should be educated to rectal touch, however re-

pugnant it might seem to be. Success in this method of palpation depends not so much upon the length of one's finger, as upon the strength of one's forearm, and the mode of making pressure upon the perineum. At first, the examining finger will become quite sore, but this will soon pass off, and the surgeon will be able to obtain much valuable information from this skilled, systematic examination of the rectal field. He did not think that seminal loss occurs at stool in perfectly healthy persons. In most of these cases there will be found a very catarrhal and thickened condition of the seminal fluid. It is, after all, only a symptom. Not infrequently these sexual disturbances come on after severe illnesses. Regarding the stripping of the vesicles, he said that he was aware that many who have tried it have not obtained good results; on the other hand, a number of well known surgeons have been satisfied with the method. It is largely a matter of special technic, and many do not acquire it; hence, the failures. It is a prevalent notion that nothing is accomplished by stripping unless there is a large return of abnormal spermatic fluid, but this is not the case. When there is much infiltration outside of the vesicles, a considerable and prolonged treatment will be required before much result will be observed.

DR. CABOT said that general practitioners often fail to secure good results, not because they omit to give good advice, but because they neglect to make a careful examination. In normal cases, scarcely any fluid will be obtained by stripping. After considerable experience with stripping of the seminal vesicles he felt positive that a fair percentage of the cases derive benefit from the treatment.

DR. STURGIS, in closing the discussion, said that he had endeavored to make clear in the paper that the condition was an atonic one, without any active inflammatory process. In his experience, there is little or no inflammation of the seminal vesicles, or prostate in spermatorrhea. He originally had thought that the simple passage of a sound is all that is required, but in these non-inflammatory cases there is much tolerance to instrumentation, and he was inclined to believe that the prolonged retention of the sound in the urethra is a decided advantage. It is very different from the cases of diurnal pollution. Cases of inflammation of the vesicles are entirely distinct from spermatorrhea. Unless there is some special reason, he would be opposed to continual "milking" of the vesicles. Undoubtedly, in many chronic inflammations of the vesicles, an occasional stripping will do good; in the majority of cases it will probably prove harmful rather than beneficial. The discharge of semen at stool he would hardly look upon as a catarrhal condition. In the larger proportion of cases he believed that constitutional treatment plays an important part. These patients tolerate much stronger solutions of nitrate of silver than patients with diurnal pollution. It is his habit to employ as strong solutions as twenty or thirty per cent.

DR. ROYAL WHITMAN read a paper on

SOME PRACTICAL REMARKS ON SHOES. (See page 198.)

DR. J. W. BRANNAN made some remarks on

FLUID VACCINE.

He said that the New York Board of Health claims one hundred per cent. of successful primary vaccinations with their fluid vaccine. Three weeks ago he had used it in vaccinating six adults, all of whom had good secondary marks. The vaccination was perfectly successful in every one of these cases—a rather unusual experience.

DR. J. H. HUDDLESTON said that he thought the present notion of immunity from vaccination is very different from what it had been a number of years ago. It is certainly true that some persons who have been successfully vaccinated at one time can again have a typical vaccination six months later. It seems as if the rubbing in of a good deal of virus makes a vesicle of somewhat larger diameter than when a small quantity of virus is used.

DR. GUIERAS remarked that for two years he had vaccinated on the Board of Health, and in no case had he prepared the arm antiseptically. In only two was there any infection—one an erysipelas and the other an abscess.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting Held March 2, 1897.

The President, B. SACHS, in the Chair.

REMARKS ON THE MORBID ANATOMY (CHIEFLY OF THE BRAIN AXIS) IN DEMENTIA FROM LUES.

DR. E. C. SPITZKA read a paper with this title. He said that while cerebral syphilis is recognized clinically in most cases by a certain uniformity of type, it is still so variable in its manifestations that each case must be regarded as a law unto itself. Cerebral syphilis being chiefly an arterial disease, and the nutrient vessels being chiefly terminal vessels, each thrombic or gummy arterial lesion constitutes almost an atrophy experiment. In this disease epithelial granulations are extremely common, and are of two varieties, *viz.*, (1) round, small, regularly distributed, and almost translucent; and (2) warty, firm, opaque, and interlacing. The latter are the older, and contain connective-tissue elements.

Dr. Spitzka then quoted the following case: J. R., forty-seven years old, married nineteen years, had been seen by him on January 21, 1881. The patient complained of weakness of the limbs and of fugitive pains in various parts of the body. On rising from bed they became less severe and disappeared after walking. There was reflex iridoplegia and pain; the knee-jerk was slightly more jerky than usual, but not exaggerated; there was no Romberg symptom. The ocular background was normal. There was right ptosis of extreme degree. The pupils were unequal. All the associate movements of the eyeball were normal. There was no marked tremor of the hands. The tongue was protruded steadily in the median line. There was no facial paresis. The urine was normal, and there were no bladder symptoms at any time.

He was seen at intervals during twenty months. At no time was it possible for him to remember facts when they were recalled to him by association, and at no time

was he unable to attend to the details of his business, yet all his acts impressed both lay and professional observers as automatic. His family noted an exaggerated irritability. Mixed treatment was prescribed, but was not carried out regularly. Four months after he was first seen he had an apoplectic seizure, which was followed by an insufficiency of the left rectus muscle. A second and similar seizure was followed by left ptosis. After the first attack, mercurial inunction caused prompt improvement, but not so after the second. Two days before death the speaker had seen him. For some days previously he had been constantly making the tour of the house, and when seen was busily engaged in ripping the binding from the furniture. He went into coma a few hours later, and died in this state. At the autopsy the dura and arachnoid were entirely normal. The vessels of the convexity were apparently normal. The basilar artery was slightly thickened in its anterior third, and the right posterior cerebral artery exhibited two yellow patches. The left ventricle was normal. The slope of the aqueduct of the third ventricle was filled with net-like and firm granulations. The posterior division of the fourth ventricle contained numerous warty granulations. The brain axis was preserved according to the methods then in vogue. Two sections were exhibited, *i. e.*, from the anterior pair of the corpora quadrigemina and from the crura. The chief nuclear changes in this case were limited to the posterior division of the pneumogastric nucleus. A child of the patient whose case has just been described came under observation with a distinct papular syphilide at the time of the father's death.

This case was contrasted with another, which exhibited a typical picture of parietic dementia. The syphilitic infection had occurred twelve years before death, but the mental disorder had lasted only fourteen months. Death occurred in an apoplectiform sequel of a delirious exacerbation. The fore-brain showed no marked lesion of the neural elements; there was, however, a marked proliferation of the "spider cells." In the brain axis were diffused proliferations of nuclear elements in the reticular formation of the pons, and there was actual cirrhosis in the raphe and in the course of the hypoglossal nerve. The speaker said that the difference of the location of the arterial lesion in the brain axis in cerebral syphilis determines whether the case is to be one of syphilitic dementia or parietic dementia. With the intensification of the process in the aqueduct the former is to be expected. The vessels of the reticular formation are not strictly terminal, and nutritive changes are apt to be followed by insidious and irritative damage to the tissues, and corresponding influences on the function and tracts there located.

THE PRESIDENT said that he had been much interested in these comparatively little known findings in the lower portion of the brain axis. During the past few years he had been impressed by a number of cases which, clinically, had the appearance of general paresis, but which, in their general course and development, proved to be entirely atypical. Then there is a class of cases which from the outset appear to be distinctly syphilitic, because associated with the mental symptoms are other symp-

toms known to be syphilitic, *e. g.*, oculomotor palsies and frequent epileptiform seizures. He had taken some pains to determine clinically the symptoms which would enable one to differentiate between the typical paresis and the cases which yield a more favorable prognosis.

Dr. Sachs then referred particularly to the case of a man who had been stricken about one and one-half years ago with very marked delusions of grandeur, and had become entirely unable to take care of himself and family. His memory forsook him, and he was compelled to choose between confinement abroad or an immediate return to this country. A few days after his return Dr. Sachs had seen him. At this time he presented every single symptom of parietic dementia. There was the characteristic speech and the immobility of the pupils, and he was unable to write his name, etc. These symptoms gradually increased. He was placed under the care of an able trained nurse, and during about six months there was no decided change. After this time a gradual improvement was noted, and at present, eighteen months later, he is entirely well and able to attend to his business. The only remaining symptoms are complete immobility of the pupils and absence of the knee-jerks. His mental condition now is entirely normal. This patient confessed to a syphilitic infection many years ago. He has two healthy children, and there is no history of miscarriages. This case, Dr. Sachs said, seems to present a very different clinical course from that of ordinary general paresis. Apparently the specific meningo-encephalitis might be recovered from. In the other cases which he had seen he had looked upon the ultimate prognosis as grave, but in the one just cited he was inclined to believe that the outlook was much more favorable.

DR. W. M. LESZYNSKY said that the experience of most observers with cases of parietic dementia is that there are remissions simulating recovery. During these remissions the improvement is so marked that often the patient is discharged from an asylum as "cured." Usually, however, there will be a recurrence within a year.

DR. W. GRANGER said that remissions in cases of paresis are observed both in the syphilitic and non-syphilitic. The case cited by Dr. Sachs was very different from those in which remissions usually are observed; the almost complete restoration of the mental condition in this case would seem to indicate the possibility of ultimate recovery. Remissions in paresis will not be found to be perfect if the conditions are thoroughly and searchingly investigated. The power of concentration, of continued work and of self-control in the annoyances of daily life, will be found defective, showing that there is not a full restoration of the mental integrity. It will be remembered that many years ago Dr. Henry Hurd, a careful observer, reported what was thought to be a cured case of general paresis. In the report of the case, however, it was noted that the man did not have his former energy and power of attention to details. After a remission of many years there was a recurrence and death ensued.

The President said that there is another order of cases of general paresis suggesting the possibility of the clinical symptoms being due to a true syphilitic morbid

process, and not to the ordinary morbid process of general paresis. This view had been suggested to him by the case of a man who had also been seen by Dr. Spitzka about ten years ago. At that time there had not been the slightest doubt of the existence of general paresis. The man has been in a condition of dementia, however, for eight years. The disease developed very soon after the initial lesion of syphilis. In this case it seemed to him that the dementia is due to a widespread meningo-encephalitis, with resulting sclerotic changes.

DR. SPITZKA said that cases like the one to which Dr. Sachs last referred, of the continuance of life without restoration of mental power, in which the typical symptoms of parietic dementia are present, are far from rare; there are at least a dozen illustrative cases now in this city. He had seen distinct remissions lasting fully four years, and a large number lasting for a year and a half. He would, therefore, wait at least two years before feeling very sanguine about the case referred to by Dr. Sachs. The persistence of the Argyll-Robertson pupil, or of the absence of the knee-jerk, is not, however, an obstacle to recovery, because they are the last to disappear; indeed, the condition might have existed before the case came under medical observation, or there was evidence of any disease. In the case specially considered in the paper, the lesions occurring in the very locality where one would expect the most serious, if not fatal, consequences, and yet had yielded the best prognosis. One of these patients had been seen by Dr. Seguin and his staff sixteen years ago when he was in a condition of coma justifying the statement that he was moribund. Another had been seen by one member of the society who had pronounced him dead nine years ago. In both cases glycosuria, with a large percentage of sugar, had persisted to this day. In the first case there was only one mental symptom, *viz.*, when the man shut his eyes he lost the sense of his identity. The other patient presented another singular anomaly, *i. e.*, he could remember every fact which had been brought to his mind up to the time of his comatose or apoplectic seizure with an accuracy which was very remarkable, and yet five seconds after he had answered such questions he could not tell what question had just been propounded to him. Dr. Spitzka said he had been puzzled to account for the fact that all past registrations should be intact in a man fifty-three years of age, and yet his judgment should be so little embarrassed that he should make application for the appointment of a commission to take care of his business. If there was a degenerative process in the cortex, it should have shown itself in eleven years by an abolition of recollections, or at least by an abolition of associations, or by impairment of the sense of identity, yet none of these things had occurred.

Regarding the effect of antisiphilitic treatment in these conditions, the speaker said that as long as there is improvement, or prolongation of life, or an increase in the number and length of the remissions following such treatment, he would hold the door of hope open regarding the curability of dementia. Those who argued that if cases of supposed parietic dementia recovered they could not

be examples of parietic dementia, belonged to another planet.

REPORT OF A FATAL CASE OF HEMORRHAGE INTO THE PONS.

DR. W. M. LESZYNSKY reported the following case: At 8 A.M., on January 23d, he had been called to see Mrs. X, fifty-five years of age, the mother of six grown-up children. It was stated that she had been in excellent health previously. Half an hour before his arrival, and after having taken a cup of coffee, she suddenly lost power on the left side and became dizzy. When seen by him consciousness was preserved. Her pulse was 86, and of high tension; respirations 24 and regular, and temperature 99° F. in the mouth. The heart action was forcible and indicated well-marked cardiac hypertrophy without valvular disease. The lower facial muscles were paralyzed on the right side; on the left, the lower facial muscles were in tonic spasm. Both pupils were equally contracted to about 1.5 mm., and were absolutely immovable. She could not voluntarily elevate the left upper eyelid, but could close the right lids. The left eyeball deviated outward; the right was in parallelism. The tongue was protruded in the median line. The left upper extremity was paralyzed. Sense and motility were normal on the right side; the left knee-jerk was feeble. The patient insisted that the vertigo, hemiplegia, and inability to open the left eye occurred simultaneously. During the next hour and a half Dr. Leszynsky remained at the bedside and there was no sign of mental hebetude or any change in the symptoms. The urine contained a large quantity of albumin, and many granular casts and broken-down red blood-corpuscles. When seen again, at 1 P.M., she was completely comatose, and in a cold perspiration; there was complete relaxation of the paralyzed extremities. The right forearm was flexed upon the arm very rigidly. Both knee-jerks were exaggerated. Pulse 84, respirations 24, and temperature 99.2° F. Venesection was suggested, but was delayed until 8 P.M., owing to the absence of the family physician. There was then complete relaxation on the right side, and the temperature was 103.4° F. Sixteen ounces of blood was taken from the right median basilic vein, and the stream of blood indicated great pressure. At midnight the pulse was 120, respirations 40, and temperature 101.8° F. in the axilla. At 4 A.M. the temperature was 105° F., and death occurred at 6.30 A.M., with a temperature of 107° F. No autopsy was permitted.

Dr. Leszynsky said that he thought it was questionable whether free venesection could have saved the patient, even if it had been undertaken very early. It apparently was one of those cases of chronic interstitial nephritis with pronounced cardiac hypertrophy, without special symptoms, until cerebral hemorrhage unexpectedly terminated life.

REVIEWS.

ELEMENTARY BANDAGING AND SURGICAL DRESSING FOR THE USE OF DRESSERS AND NURSES. By WALTER PYE, F.R.C.S., late surgeon to St. Mary's

Hospital. Revised and in part rewritten by G. BEL-LINGHAM SMITH, F.R.C.S., Surgical Registrar Guy's Hospital. Seventh edition. Pp. 218. Philadelphia: 1897.

IN these days of large text-books it is an agreeable surprise to take up a little book which, in spite of its modest title, contains a fund of valuable information. In this well-illustrated little volume is to be found a comprehensive description of the methods of bandaging, and of splints; of the dressing and suturing of wounds, the method of making poultices and fomentations, and the dressing of simple wounds; together with the treatment, in the first instance, of accidents and emergencies, such as fractures, hemorrhage, shock, poisoning, etc. We are surprised that the author still clings to the use of perchlorid of iron—as a last resort—as a styptic. Nor can we quite agree with him when he states that a silicate of soda dressing will set in three to four hours; in our experience it has usually taken twelve to twenty-four hours. We suppose it is a printer's mistake that on page 62 we read of the plaster jacket as recommended by Dr. Sayres, instead of Dr. Sayre.

We are not surprised that the book has already reached its seventh edition. It is the best of its kind we have ever seen, a handy little volume which should be in the pocket of every medical student.

RETINOSCOPY (SHADOW TEST) IN THE DETERMINATION OF REFRACTURE AT ONE METER DISTANCE WITH THE PLANE MIRROR. By JAMES THORINGTON, M.D., Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic; Ophthalmologist to the Vineland Training School for Feeble-Minded Children, etc. Twenty-four illustrations. Philadelphia: P. Blakiston, Son & Co., 1897.

THIS concise and lucid treatise is an abstract of the author's previous writings and lectures on Retinoscopy, delivered during the winter course on Ophthalmology at the Philadelphia Polyclinic. Although it is primarily a text-book for college students and post-graduates, ample material is given by which the practitioner may gain a working knowledge of the method in his own office. The little volume is abundantly illustrated. A number of mechanic aids to the test—some of the author's device—give an additional value to the book.

A TEXT-BOOK OF BACTERIOLOGY. By GEORGE M. STERNBERG, M.D., LL.D., Surgeon-General U. S. Army, Ex-President American Public Health Association, Honorary Member of the Epidemiological Society of London, etc., etc. Illustrated by heliotype and chromolithographic plates and two hundred engravings. New York: William Wood & Co.

THE "Manual of Bacteriology," by the same author, has been widely and favorably known since its publication in 1892. This text-book is a revised edition of the Manual with a large part of the detailed descriptions of nonpathogenic bacteria omitted. It is intended for students of bacteriology and for use in laboratory investigation.

The book, comprising 690 pages, is well printed and

profusely illustrated. The illustrations are partly from original preparations and partly taken from illustrations in other bacteriologic works. They are well selected and greatly enhance the practical value of the volume.

The text-book is subdivided into four sections. The first deals with laboratory apparatus, staining methods, culture media, photography of bacteria, etc. The second section deals with bacteria as a whole, describing conditions favorable or unfavorable for their growth; their products and the influence of disinfectants, blood-serum, etc., upon their growth. This portion includes a practical consideration of disinfection of infected clothing and rooms. The third section, comprising two-thirds of the volume, gives a detailed account of the varieties of pathogenic bacteria, the more important forms being very fully described. The final section considers briefly the saprophytic bacteria occurring in the air, water, earth, etc.

The method of preparing the work from original monographs has both advantages and disadvantages. The inclusion of the partially contradictory results obtained by different investigators allows the experienced bacteriologist to determine by experience the amount of truth in each statement. For the beginner, however, it is necessarily somewhat confusing. Even the latter is apt to obtain a broader and more correct idea of bacteriology from such a method than if points still unsettled were arbitrarily put down as certainly established.

When, however, earlier conclusions have been shown to have been certainly incorrect it would have been better to omit the incorrect observations. Thus, in the article on diphtheria, on page 373, it is stated that "diphtheria bacilli occur only in diphtheria and probably never in healthy throats," while on page 385, in "additional notes," it is stated that "later investigations have shown them to be frequently present."

In some portions rather important omissions occur. Thus, the best media for growing streptococci, a mixture of blood-serum and bouillon, is not mentioned, and the great difference in the amount and kind of virulence possessed by different streptococci is inadequately stated.

A few incorrect statements have been allowed to remain. Thus, it is stated on page 356, that "no other organism than the typhoid bacillus has been found to be present in deeper portions of the intestinal glands involved in this disease or in the internal organs"; also, in another portion, that "diphtheria bacilli are never present in the internal organs of those sick with diphtheria."

As a whole, the book is deserving of high praise, and it appears to us to be the best work on bacteriology published in the English language.

DEUTSCH'S LETTERS. A Practical Method for Easy and Thorough Self-Instruction in the German Language. By SOLOMON DEUTSCH, A.M., Ph.D. Second revised edition. New York: J. H. Vail & Co., 1896.

DR. DEUTSCH'S book on this subject is well-known. Its first edition is found in the libraries of many physicians who sought to learn the German language by a study of its pages, and we are glad to see that the neces-

sity for a second edition has arisen. A key to the German exercises has been added, and the book is bound to have a wide sale, for it is the most practical work on the subject with which we are acquainted, and we can testify to its usefulness and worth.

A MANUAL OF THE PRACTICE OF MEDICINE. Prepared Especially for Students. By A. A. STEVENS, A.M., M.D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, Demonstrator of Pathology in the Woman's Medical College of Pennsylvania, etc. Fourth edition, revised and enlarged. Illustrated. Philadelphia: W. B. Saunders, 1896.

THIS book is a concise and exhaustive manual on the practice of medicine, and has been specially designed for students preparing for graduation and hospital examinations. Some important additions have been made, many of the articles have been rewritten, and an appendix has been added, in which the author briefly describes the usual methods for examination of the blood and gastric contents.

It is important in a work of this kind to eliminate theories and to give due prominence to facts which the student is required to know. This has been accomplished in a happy manner, and the condensed form of statement also makes the book valuable for the busy practitioner as a handy work of reference.

ARCHIVES OF CLINICAL SKIAGRAPHY. Edited by SYDNEY ROWLAND, B.A., Cambridge, late Scholar of Downing College, Cambridge, etc. London: The Rebman Publishing Co., Ltd., 1897.

THE application of Röntgen photography to the varied purposes of clinical diagnosis has made such great strides during the past year that the special literature of skiagraphy has assumed unexpected proportions.

The publication under consideration appears somewhat in the form of an atlas containing a series of half-tone reproductions of skiagraphs, with descriptive text, illustrating interesting or unusual applications of the new photography to medicine and surgery. The preponderance of the latter department is shown by the fact that five plates out of eight deal with fractures or their sequelæ.

Interesting abnormalities are shown in the skiagram of six toes in each foot, and an unusually clear picture is that of a double monster, in which the two breeches and lower extremities are quite separate, while the four upper limbs are fused. The skiagram shows two faces, one of which is perfectly formed, the other incompletely developed and represented only by a pair of ears fused together, two bases crani, and two distinct columns of vertebræ with their anterior surfaces facing each other. The original plates were evidently unusually clear and sharp. The reproductions are as good as can be expected with the process used. The claim is made in the title that the illustrations are collotypes, whereas, in fact, there is not a single illustration by this process, the cheaper half-tones being substituted.

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ORIGINAL ARTICLES.

THE TREATMENT OF CUTANEOUS CANCERS.¹

By J. B. MORGAN, M.D.,
OF AUGUSTA, GA.

THREE of the recent theories of the etiology of cancer are at present claiming more than passing attention throughout the scientific world, each having its plausible side and each its warm advocates. "Asymmetric Cell Division in Cancer and its Biologic Significance," is the title of a thesis by Hanseman, wherein the theory of indirect cell division is advanced. The second theory, which has a great many advocates who differ slightly, however, as to details, supposes that an intracellular or intranuclear parasite (according to some, a coccidium; to others, a psorosperm, and to still others, a gregarina) infests the tissues, and through its presence induces a lawless growth of epithelial and connective-tissue elements. The parasitic theory is the third one. This supposes that the cancer parasites are animals, and that there are no epithelial elements at all in these neoplasms, the polymorphous bodies found in the growth being in reality not epithelial cells but the parasites themselves, and that these parasites produce a toxic substance, known as cancrioid, which is responsible for the so-called cachexia.

Such widely different ideas would seem to indicate that the final solution of the subject has not yet been reached. So far as the subject of this paper is concerned the treatment here suggested is equally applicable whichever of these theories is accepted. Cancer still remains one of the most dreaded and fatal diseases known to science. While this unfortunately is true, and while as yet no specific in the treatment of the disease has been discovered, on the whole the outlook is decidedly encouraging. More is known about the nature of cancer, macroscopically and microscopically, than was known even five years ago, and it is now treated more successfully every year. Some things which we have learned concerning it are of the highest importance and profoundly influence our present treatment. For instance, it is now almost universally held by all leading pathologists that cancer is primarily a local growth, and that all cancers can be cured if thoroughly removed before the epithelial cells have infiltrated the connect-

ive tissue and neighboring glands, for it is generally conceded that it is the proliferation and infiltration of the epithelial cells which causes cancer to invade other tissues and organs and become disseminated throughout the body. This being the case the only treatment which offers anything like a cure is the one which has for its object the early and complete removal or destruction of all the morbid elements.

Another important fact connected with cancer, which is also an unanswerable argument for its early and thorough removal, is its manner of growth. Non-malignant new growths, such as lipoma, chondroma, etc., originate from embryonic rudiments in an indirect manner as a result of an injury to the part; they are simple tissue-tumors and increase in size by continuous multiplication of existing cells, and as the tumor increases in size by centric growth, the tissues of the part in which it is situated are pressed upon until finally they become so compressed as to form a more or less distinct capsule within which the tumor is contained. Outside of this there is no infiltration of the tissues or peripheral extension growth. This capsule can easily be recognized, and the extent of an incision in a given case definitely determined, and we can know positively when all the tumor is removed.

A very different condition of affairs obtains, however, in connection with the growth of cancer. It does not spread by centric growth, producing a sharp, easily-defined margin, but by peripheral proliferation and by an infiltration of the tissue to an extent not recognizable by touch or unaided sight. There is no capsule enclosing such a growth, and no well-marked limit to the infiltration. The increase of the tumor by continuous growth of the peripheral cells and infiltration of the surrounding tissues, not *en masse*, but gradually and without order, as regards the line of limitation, produces a condition entirely different from that produced by centric growth as occurring in the simple tissue-tumors.

A fibroma is due to the growth of fibrous cells, the process being almost identical with that which occurs in the healing of a wound. A lipoma is nothing more than a fibroma in some of the cells of which are deposited fat globules; the oil in the cell has simply pushed the nucleus to one side. A fibrous cell does not possess the power of infiltration as does the

¹ Read before the Georgia State Medical Association, April 21, 1897.

epithelial, and is, therefore, self-limiting, movable, and, as a rule, benign. In the one case the cells grow from the center and bulge out, and are dependent upon some form of external irritation; in the other, the cells grow on the surfaces and dip into the tissues, due to some irritation acting within the growth. In the one case the pathologic process is sharply defined and its limits restricted by the protective capsule; in the other, the diseased cells are unconfined and free to wander where they will.

The therapeutics of cancer are, to say the least, in a very unsettled state and in every way highly unsatisfactory. A great many remedies have been tried, and all have proved more or less complete failures. No surgeon would now think of relying on general constitutional remedies, except in cases where the knife or some good equivalent could not be used. If the etiologic factor of cancer is parasitic, we may hope that in the future some agent will be discovered which will kill the germ or make its habitat unfavorable to its continued existence, but at present our only reliance is in local treatment—the prompt and complete removal or destruction of all diseased tissue. To accomplish this end surgical means have been almost exclusively employed. In the removal of ordinary benign tumors surgery certainly offers us the best means and the greatest success, for in simple tumors the growth, when favorably situated, can always, and with absolute certainty, be removed by excision, but in cancer, in which there is no limiting membrane and no sharply defined guide as to the extent of the infiltration beyond the tumor-mass, other means than the use of the knife may more properly be indicated for its successful removal.

The object of this paper is to endeavor to emphasize this point. I wish to state here that I am a strong believer in the use of the knife in suitable cases, and frequently employ it. It has the advantage that, where an anesthetic is employed, it can be used without pain, the tumor can be removed quickly, and the wound heals rapidly. Again, there are certain portions of the body in which cancer may occur where employment of the knife seems to afford the greatest hope of success, as for instance, on the flexor surface of the forearm, the penis, and the scrotum. Unless seen early, in cases of cancer of the forearm and penis, amputation will probably offer the only relief. A great amount of tissue can be removed from the scrotum without injury to the patient, therefore the knife has decided advantages over any other form of local treatment for cancer of this locality, but in other situations, as the nose, cheek, or, in fact, any portion of the face, where the necessary amount of tissue cannot be re-

moved without producing more or less mutilation and deformity, the knife should not be used. The treatment of cancer by the knife is very far from satisfactory. It is true that if all of the diseased tissue is removed by this means the tumor will not recur, but practically, this seems very difficult to accomplish. It is a fact that very frequently there is a recurrence of the disease after a few months or possibly a year or two. I have seen but few instances of skin cancer removed by the knife which have not recurred within two years. It is well known that local recurrences after knife operations nearly always begin as small, hard, and well-defined nodules on the very edge of the scar, being partly in the normal and partly in the cicatricial tissue. Attention has been drawn to this fact recently by a number of our most eminent surgeons, and they suggest that the operation should be of a more sweeping character.

It is difficult to remove a malignant tumor without the knife cutting into some portion of it, therefore, the blade must be infected by some of the epithelial cells, and it is easy to conceive that some of them may be left embedded in the healthy tissue in spite of careful antiseptic washing and closure of the wound after all of the original tumor has carefully been removed, but with the germ of the recurrent disease unintentionally sown in good soil. On the other hand, if a few of the scattered epithelia happen to be situated outside of the line of incision there is no inflammatory process to weaken or destroy them. There are a number of authentic cases of cancer being destroyed by the results of inflammation alone. It is no uncommon practice now to produce inflammatory conditions for this specific purpose, but in this day of asepsis and antisepsis the wound heals by first intention, and if a single cancer cell is left even at the margin of the wound it is not destroyed, and during the healing process, when an unusual amount of nutrition is furnished to the part, this epithelial cell is placed in a specially favorable condition to grow and increase.

These and other reasons would seem to indicate that the knife is not always the best means for the removal of malignant growths. There is no doubt, I think, that the employment of such escharotics as caustic potash, chlorid of zinc, and arsenious acid is fully as efficient as the knife in any case, and has decided advantage over it in many instances. I am sure that not a few will regard this as rather an extreme statement. I am fully aware of how the profession in general is prejudiced against those ignorant or designing charlatans who advertise themselves as "Cancer Doctors," "Cancer Specialists," etc. I fully share in this proper detestation of such quacks and their methods, but very few will dispute the

fact that even they do sometimes cure cancer, and that, too, in many instances without any kind of knowledge of the disease treated, or of the therapeutic action of the remedy employed. Because a certain kind of remedy or a certain treatment is employed by blatant quacks, is no argument that there is not good in it. The corner-stone of rational medicine is to accept facts wherever they are found.

My personal observation in the use of caustics in the treatment of cancer may be of but little value, as I have not treated many cases, and only those coming to a physician in general practice. I am indebted to Dr. A. R. Robinson of New York for much that is good in this paper. But for his teaching I am sure that I would have continued to advocate the use of the knife in the treatment of skin cancers, notwithstanding that when I have used the knife I have had more recurrences than cures. During the last four years I have treated fourteen cases of skin cancer with caustics, and in not a single instance have I seen the slightest indication of a recurrence. Five of the patients were operated upon from three to four years ago, three from two to three years ago, and the other six have been treated within the last two years. One of the number died from pneumonia three years after having been operated upon; the others are all living and in good health.

Caustics of various kinds have been employed for a long time in the treatment of cancers both by cancer quacks and the regular medical profession. I am satisfied that their use in this connection has not received a fair and impartial trial at the hands of the latter. Most physicians have condemned their use without a trial, or, if employed at all, it has been in a very crude and imperfect manner. To my mind, there are several good reasons why caustics should be given a full, painstaking trial in the treatment of skin cancers. In the first place, cancer is a most dreadful disease and fearfully fatal, and anything which offers a reasonable hope of cure should be welcomed gladly. In the second place, and if for no other reason, their use should be taken out of the hands of ignorant charlatans and placed in the hands of the regular profession, where they properly belong.

If the cure of cancer is dependent upon its early removal, the caustic treatment has an additional advantage over the knife, since a great many timid patients who shrink from a cutting operation, with a little tact upon the part of the operator, will readily consent to the application of a caustic paste. There is no doubt that some caustics have somewhat of an elective action, and all of them cause less destruction of tissue, and produce less deformity than does the knife. Again, if the products of inflammation have

any influence in modifying or destroying the growth of cancer cells, the fullest benefit and advantage of it is obtained in the use of caustics.

These caustics are quite poisonous, and when employed in a careless or incompetent manner are likely to do great harm. Weak caustics, too, do infinitely more harm than good. By their use only a portion of the tumor-mass is destroyed by one application, and the resulting inflammation is slight and gradually loses itself in the surrounding tissues. This has the effect of simply stimulating the growth, and hence of causing a more rapid proliferation and infiltration of the epithelial cells than existed before the cauterization, but with such caustic agents as caustic potash, chlorid of zinc, and arsenious acid, the tissue can be destroyed to a greater or less extent and as rapidly as is desired.

As a result of the application of any one of these caustics there is complete destruction of the tumor-mass and an intense widespread inflammation which extends far beyond the limits where the knife would usually be employed. I am fairly well convinced that from the use of these caustics there is formed in the tissue cauterized a toxalbumin which is destructive to the cancer cells or to the parasites of cancer, if such exist. It may be the inflammatory process alone, which produces the desirable results, but when enlarged lymph-glands at a distance from the cancerous tumor diminish in size after the caustic has been applied it is difficult to avoid the conclusion that such an agent must be present and active. The following is a case in point:

Mrs. M. H., aged fifty-five years, came to me about $3\frac{1}{2}$ years ago with a recurrent epithelioma of the right breast, the original growth having been removed eight months previously in rather an imperfect manner. The axillary glands had not been removed as it was said they were not enlarged at the time of the operation. They were now enlarged, however, and I advised a second and more thorough removal of the tumor and glands with the knife. She firmly declared that she would rather die than undergo a second cutting operation. I then applied Marsden's paste and left it on for twenty hours, and in seven days the entire tumor sloughed out. The wound healed in about eighteen days. At the time I dismissed her by the most careful examination I could not detect a single enlarged gland in the axilla.

It is now more than three years since this patient received the treatment and there has not been a sign of recurrence. I have operated on two primary cancers of the breast since that time, with caustic potash, in one case the glands being slightly enlarged. The glandular enlargement entirely disappeared in about three weeks, and in neither case has there been anything but the most favorable result. In the near

future I intend to publish the results of treatment in other cases.

Each of the escharotics mentioned seems to have special indications peculiar to itself. For instance, if rapid work is desired, caustic potash is indicated; in extensive work, chlorid of zinc has advantages, and for sure, safe work, in the majority of cases, arsenious acid is the most desirable agent we can employ. Caustic potash quickly liquefies the tissues, and at one sitting a very large tumor can be destroyed. Its action, however, extends farther than the part to which it is directly applied, and its use is followed by marked inflammatory changes in the surrounding parts which may or may not lead to destruction of the tissue. If the latter occurs, a wound results as large as that usually made by a knife, but with care in its use the destruction of the surrounding tissue from the intensity of the inflammation may entirely be avoided, and only the tumor proper be destroyed. The amount of inflammation following the use of caustic potash is said to be a valuable guide as to the extent and amount of the epithelial infiltration. This seems plausible, since the inflammation must depend upon the vulnerability of the tissues, and the vulnerability upon the condition of nutrition of the part, and this condition is directly the result of circulatory disturbance, caused by the extent of infiltration by the epithelial cells. The agent is a valuable one when positive results are desired during one sitting. As a rule, it leaves more cicatricial tissue than either chlorid of zinc or arsenious acid. Its use is contraindicated near the eye or upon the nose. Its application is attended by much pain, but a general or local anesthetic can be employed, and in this respect it has no disadvantages as compared with the knife.

Chlorid of zinc as a caustic may be used in stick form, in solution, or in a paste. It causes more pain than either caustic potash or arsenious acid. Chlorid of zinc is not thought to have any decided elective action for pathologic tissue, but destroys both normal and pathologic tissue with an almost equal degree of rapidity. On account of its slower deliquescence and slower action, it has some advantages over caustic potash. In epithelioma of the roof of the mouth, of the lip, or when situated near the outer or inner canthus of the eye, on the lid, a pointed stick of chlorid of zinc may be used more effectively and with greater precision and safety than any other caustic. Caustic potash or any form of caustic paste is apt to cause too much inflammation when used near the eye, and is not enough under the control of the operator. A fifty-per-cent. solution of the chlorid of zinc may be injected into any desired portion of a cancerous growth, or a paste may be employed for its

destruction. Bougard's paste is one of the best that we possess in the treatment of small cutaneous cancers. It is prepared as follows:

R	Wheat flour	{	aa	.	.	.	.	3 i
	Starch							
	Arsenious acid		.	.	.	.		gr. x
	Hydrarg. sulph. rub.	{	aa	.	.	.		gr. xxxv
	Ammon. mur.							
	Hydrarg. bichlor.		.	.	.	.		gr. iv
	Zinc chlorid (cryst.)		.	.	.	.		3 i
	Water (hot), about		.	.	.	.		3 i ss.

(Ten grains of cocain muriate may be added to this.)

The six first-named ingredients should be mixed together and finely powdered in a glass mortar, the zinc chlorid, after being dissolved in the hot water, then being added and the whole rapidly mixed by means of a pestle. It should then be allowed to stand for twenty-four hours, when the paste will be ready for use. It is spread thickly on a piece of muslin and left upon the part for twenty-four hours. If the first application is not positively successful, the second should be made within a few days. This paste can be applied to a large surface at one time, as there is no danger of poisoning. If the surface of the tumor is hard, or the epidermis unbroken, it is better before applying this, or any other form of paste, to lightly apply a stick of caustic potash. The action of the paste is then more prompt and sure. After the tumor has sloughed out, which will occur in from three to ten days, the wound may be treated with any simple protective salve or antiseptic dressing.

The caustic above all others which has the widest range of usefulness, and from which the most satisfactory results in the treatment of cutaneous cancers are derived, is arsenious acid. It is usually employed for this purpose in the form of a paste, known as Marsden's paste, and consists of equal parts by weight of arsenious acid and powdered acacia, rubbed well together, with enough water added to make a paste about the consistency of rich cream. This should be spread upon muslin or rubber plaster in a layer about one-quarter of an inch thick and applied so as to extend beyond the edge of the visible tumor in every direction. It should be kept in position for from fourteen to twenty hours. From four to six grains of cocain should be incorporated with each dram of this paste. It is not as good as chlorid of zinc in cases of cancer of the lip or of mucous membranes on account of the danger of poisoning by absorption. The fact that the paste may be applied to the healthy skin without producing destructive results shows that it has an elective action for diseased tissue. It acts quicker and with less pain than the chlorid of zinc. To my mind, Marsden's paste is preferable to all other forms of caustics and may be

regarded as almost a specific for skin cancers, if they are treated early. The wound which remains should be treated as in the case of chlorid of zinc. If the tumor is large, or the wound does not heal kindly after a reasonable length of time, a second or even third application of the paste should be made. To apply these caustics successfully demands a certain amount of experience, but this any one can acquire after applying them two or three times. The greatest cause of failure in their use is the neglect to treat the case energetically until thoroughly satisfied that all diseased tissue has been destroyed.

THERMIC FEVER AND HEAT PROSTRATIONS.¹

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THERE probably is very little, if anything, new that can be said regarding the effects of high atmospheric temperature upon the human body, but as the summer of 1896 demonstrated that we are by no means removed from its dangers, and as my opportunities for observing its effects during July and August were rather unusual in their completeness, it has seemed that possibly it might be instructive to review the condition in connection with a few typical examples. The cases to which I refer, thirty-two in number, occurred during the service of Dr. G. R. Butler at the Methodist Episcopal Hospital, Brooklyn, and it is by his courtesy that I am permitted to report them.

The epidemic character of the outbreak of heat prostration and its compression within the limits of a few days, produced a very vivid impression, which would have been entirely lacking in the presence of only a few isolated cases. This, perhaps, cannot be better illustrated than by the fact that at one time at the gates of the hospital there were two ambulances, one ice cart, and a delivery wagon, each containing one or more patients. For a few days the rush was so great that many of the patients who had suffered a mild attack, after remaining at the hospital for a few hours were allowed to go home, no record being kept of them. It would be natural to ask why, at this particular time, there occurred such a large number of cases attended by such fatal results. The high temperature alone does not explain it, because, as is well known, people living upon the high table-lands of Abyssinia and in the dry regions of Texas are much less liable to attacks than those living in the lowlands and in sections bordering on

the seacoast. A dry atmosphere increases tolerance of high temperature, while moisture diminishes it. During July and August, 1896, in addition to the high temperature, there was an unusual degree of humidity, rendering rapid cooling of the body impossible. Adding to these conditions the accepted predisposing causes of heat prostration—race, excessive bodily fatigues and intemperance—the etiologic factors are about complete. These conditions in combinations exhaust the so-called inhibitory heat-center so that it soon becomes greatly weakened, if not temporarily destroyed. The existence of this distinct heat-center in the brain, however, is quite seriously questioned by many accurate observers, while there are others, among whom is Gower, who give apparently satisfactory evidence of the existence of a center which does have the regulation of heat as its function.

Ott speaks of thermotaxic centers in connection with typhoid fever. Concerning heat and fever in general, some interesting experiments with rabbits, both fasting and in normal condition, are reported by Nebelthau,¹ the principal conclusions being as follows: (1) In fever there may be an increase both of production and loss of heat; (2) there is yet no proof that fever is ever due to retention of heat; (3) regulation of temperature is not wholly abolished in fever; (4) the normal proportion between the amount of heat lost by evaporation of water and by radiation and conduction is not altered in fever. Laveran² (quoted by G. N. Stewart) attempted to elucidate the cause of sunstroke by observing the effect of high temperature on dogs at rest and doing work. The latter were much sooner and more seriously affected and the rectal temperature rose more rapidly. At the time of death the rectal temperature always was at least 45.5° C. Death was not due to coagulation of myosin or to asphyxia. The heart sometimes began to beat again after the chest was opened, but transfusion of blood never restored the animal. The only explanation of the fatal result seemed to be in the action of heat on the nervous system, perhaps paralysis of the ganglia of the heart. The conclusion reached by Wood is that heat exhaustion with lowered temperature represents a sudden vasomotor palsy, or a paralysis of the center in the medulla. On the other hand, thermic fever is held to be due to paralysis under the influence of the extreme external heat of the center in the medulla which regulates the disposition of the bodily heat. Owing to this disturbance more heat is produced and less given off than normally. (Osler.)

Males, owing to their mode of life, are more sus-

¹ Read before the Kings County Medical Association, February 9, 1897.

¹ *Zeitsch. f. Biol.*, page 293, 1894.

² Pfäuger's "Archives," Bd. lviii, 229.

ceptible to heat influences than females. The greatest number of cases of sunstroke or prostration occur in those between twenty and fifty years of age. That excessive bodily fatigue is a very important etiologic factor is well shown by Barclay in his account of a forced march of more than eleven hundred miles, during the very hot season, by the English troops in India. No cases of heat exhaustion occurred until more than nine hundred miles had been traversed, and the men were greatly emaciated from lack of proper food. During this period the temperature at times was as high as 105° F. at midnight. Cases of prostration then began to occur rapidly, and before the weather became cool many of the men died.

Intemperance, or even the moderate use of alcohol, especially in those whose occupation requires a considerable amount of bodily exertion, is an important factor. With but few exceptions, all the male patients treated at the Methodist Episcopal Hospital, for sunstroke or prostration, had used beer and whisky freely, two of those who died developing delirium tremens after the thermic symptoms had almost entirely subsided.

Prostrations by heat should be divided into three classes: (1) Simple heat exhaustion, in which there is a normal or subnormal temperature from the beginning; (2) cases in which the temperature does not rise much above 101° or 102° F.; and (3) cases of true sunstroke, in which the temperature ranges from 106° to 113° F., and in which partial or complete insensibility is present, convulsions or complete paralysis of the voluntary muscles being a prominent symptom. Martin of Paris classifies these cases: (1) As a cerebrospinal type, characterized by symptoms of intense congestion, injection of the conjunctivæ, convulsions and coma; (2) as a cardiac type, in which there is pallor of the face and profuse sweats, death occurring from arrest of the heart; and (3) those of a pulmonary type, in which, in addition to other symptoms, there is anxiety, dyspnea, and asphyxia. The few cases which I report herewith are illustrative of these types.

CASE I.—A plumber, twenty-two years of age, was overcome while walking in the street. On admission his temperature was 98.2° F., respirations, shallow but regular, 20 to the minute and pulse small, rapid, and feeble, 120. His pupils were dilated but did not readily react to light. He was rational, with a tendency to drowsiness, had considerable headache, and was very weak, especially in the legs. The extremities were cold. After thirty-six hours he had responded to simple medication and the external application of heat, and was discharged cured.

CASE II.—An iceman, twenty-five years of age. He had always been a hard worker and a moderate

drinker. He had not felt well during several days previous to the attack but had continued at work. He had been unable to sleep during the previous two nights, and six hours before admission to the hospital had begun to feel dizzy and weak. In spite of this he had been exposed to the hot sun all the morning. On admission, his temperature was 97° F., respirations shallow and rapid, and pulse irregular and feeble. His pupils were dilated. He was extremely prostrated, being unable to speak aloud, his muscles were relaxed, and his skin dry and cold. He was discharged, cured, on the second day.

CASE III.—H. R., aged forty, single, always had been an unusually heavy drinker, at times drinking as much as one and one-half pints of whisky during twenty-four hours. During the three or four days previous to his admission he had drunk to excess and had taken but little food. When brought to the hospital he was unconscious, his temperature being 110° F., pulse 130, and respirations labored and shallow. His pupils were contracted to a marked degree, face pale, skin hot and covered with profuse perspiration, which had a urinous odor, and all of the voluntary muscles relaxed.

He was immediately placed in a cold bath for fifteen minutes, and half an hour later regained consciousness, his temperature then being 101° F. The following day he appeared to be doing well, but toward evening his temperature rose to 102° F. and he became violent. During the night he developed well-marked symptoms of delirium tremens and died shortly afterward.

In contrast to the first two cases is the recorded history of a powerful man working in a hot, confined space at the Philadelphia Exposition in 1876. He was attacked without warning and became violently delirious. His temperature was 95.2° F., pulse rapid and fluttering, muscular relaxation was complete, and the surface of the body was covered with a profuse cold sweat. Boudin reports a series of one hundred cases of thermic fever occurring on board a French war-vessel, a majority of the men being attacked while lying in their bunks. Bonninman says that in India the greatest number of cases occur in those who are not exposed to the sun.

The diagnosis of heat prostration is ordinarily not difficult. The usual symptoms are extreme prostration, restlessness, and, occasionally, slight delirium. The body may be cool and dry or bathed in profuse perspiration. The pulse is small, rapid, and feeble, the respirations weak and shallow and the temperature subnormal, normal, or slightly above. In thermic fever to these symptoms are added unconsciousness, complete muscular relaxation, or severe tonic or clonic spasms, and more or less interference with respiration.

Guiteras says that in certain of the Southern States there exists an affection known in some localities as

"country fever," and in others as "Florida fever," which sometimes is mistaken for malarial or typhoid fever. He considers it to be entirely distinct from these diseases, and has given it the name of "continued thermic fever."

There were but few sequelæ to the cases treated at the Methodist Episcopal Hospital, and these were unimportant. The literature relating to this subject, however, is quite full, and a large number of conditions are mentioned to which thermic fever is assigned as the predisposing cause. Among these may be mentioned intolerance to the sun's rays, difficulty of speech, meningitis, general or local muscular tremor, wrist and foot drop, muscular atrophy, changes in electrical reaction of muscles, long-continued acceleration of pulse and respiration, impaired nutrition, indigestion and anemia, headache and vertigo, tenderness of the spine, epilepsy, hemiplegia, cutaneous anesthesia or hyperesthesia, enfeebled memory, deafness, and a variety of heart lesions, both organic and functional. (Barlow.)

The treatment of these patients, except in the case of those having a subnormal temperature, consisted in the application of cold in the form of ice-caps, abdominal coils or the ice-water bath, and the administration of strychnin, atropin, digitalis, spartein, or nitroglycerin, according to the indications present. All patients with a temperature of 103° F. or more were given a cold bath. This was administered as follows: As soon as possible after admission the patient was stripped, wrapped in a sheet, and lowered into a movable bath-tub containing water in which was floating large pieces of ice. Cold compresses were applied to the head, and his body was then vigorously rubbed with ice, this being kept up until the rectal temperature had been reduced to 102° or 101° F., or until symptoms of shock developed, when he was removed from the bath, wrapped in a dry sheet, and put to bed. The rectal temperature was taken every half hour, and the bath was repeated at intervals, if necessary, until the temperature showed a disposition to remain near the normal point. As a rule, it dropped from one to three degrees each time the patient was taken from the bath. In a majority of instances consciousness was regained while in the bath or immediately afterward. It is very essential in carrying out this treatment that a sufficient number of assistants be available, for the constant changing of the compresses, and the rubbing of every portion of the body with ice is of very great importance.

In a few instances the cold bath was tolerated for a short time only, and one patient had to be removed from the tub immediately after immersion on account of the shock produced. Another patient whom the

bath did not benefit, and who subsequently died, had two intestinal hemorrhages, which possibly might have been prevented had active bleeding been resorted to, a procedure which Weir Mitchell mentions as having been successfully adopted in a case of his own.

Antipyretic drugs were not administered. These never should be relied upon as a substitute for the application of cold in these cases. The number of patients treated was thirty-two and the number of deaths nine, two of the patients being moribund when admitted. The percentage of recoveries is somewhat larger than that reported by Osler in connection with cases occurring at the Pennsylvania Hospital, Philadelphia, during the summer of 1887.

ON THE OCCURRENCE OF PRIMARY TUBERCULOSIS OF THE KIDNEY, WITH SPECIAL REFERENCE TO A PRIMARY MILIARY FORM.

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(Continued from page 198.)

The mode of infection in these cases is a most interesting problem, and has long been a fruitful source of discussion. In many cases it is exceedingly obscure, and cannot be removed from the realms of pure conjecture. Three possibilities only suggest themselves: (1) Hematogenic infection. (2) Ascending infection from the lower urinary tract, either by means of the urine, through the spread of the disease along the ureter, or by the conveyance of the virus through the lymphatics. (3) Extension from similar processes of neighboring organs. The latter, if it occurs at all, must be a very rare mode of infection. The kidney notably is exempt from participation in the disease of neighboring structures, as of the vertebræ, adrenals, etc. The capsule probably acts as a protecting membrane; witness the non-implication of the kidneys in tuberculosis of the suprarenal bodies, even when the latter, as it sometimes does, gives rise to a perinephritic abscess. The mode of infection must, therefore, be hematogenic, or the kidney must become implicated by an extension of the process from below upward. There is clear evidence in support of both views. We thus recognize that the caseous variety of tuberculosis of the kidney may either be a primary or a secondary affection, and that there may occur both an ascend-

ing and a descending tuberculous infection of the genito-urinary tract; and, further, we must allow that various parts of the tract may be simultaneously involved. There can be no doubt that in the case reported by us the infection was hematogenic, and this also is doubtless the most frequent mode of infection in the ordinary primary caseous or local tuberculosis of the kidney, there subsequently ensuing a descending infection of other parts of the lower genito-urinary tract. It thus appears evident that a primary tuberculosis of the kidney, similarly as primary tuberculosis of the bones and lymph-glands, may occur by hematogenic infection without any demonstrable tuberculous lesion in any other part of the body. Of course, one can hardly exclude the possible presence of a small tuberculous focus which may have eluded detection. The interesting question under these circumstances is, In what manner do the bacilli gain access to the body and enter the blood-vessels? One naturally has recourse to the experiments which serve to prove that the bacilli may enter the body without setting up lesions at the port of entry. We further recall the symptomless course of many unsuspected cases of tuberculosis of various structures—of the tonsils, bronchial and cervical lymphatic glands. Infection of the latter, it appears from some recent investigations, may occur by means of totally latent tuberculosis of the teeth. Again, the tubercle bacilli have been demonstrated in the renal glomeruli before any cellular exudate has occurred. But, despite various facts and theories, the mode of infection of some cases of primary tuberculosis, not only of the kidney, but also of other organs, is exceedingly obscure. At times the question is impossible of solution.

While from the appearances of a kidney, removed either *post-mortem* or by operation, it frequently is relatively easy to determine the route of infection, in a not inconsiderable proportion of cases this is a matter of very great difficulty, and is at times impossible. Disseminated or secondary miliary tuberculosis, and the primary form of miliary tuberculosis such as we report, are readily recognized as instances of hematogenic infection. When, however, more or less of the entire urogenital tract is affected, it requires a careful consideration of the relative stages of the various lesions found at the more remote points of the disease to determine the route of infection; to determine whether or not the general implication is an instance of descending or of ascending infection; in the latter case, of course, we can but speak of a secondary involvement of the kidney. A more advanced stage of the disease about the trigone or fundus of the bladder, for instance, and relatively little implication of the kidney, and that limited to the

pelvis or papillæ, would be clear evidence of an ascending infection. Again, extensive destruction of the kidney, more especially toward the cortex, with some slight involvement of the ureter and a healthy bladder, is sufficiently characteristic of the descending variety of the infection. Attention might here be drawn to the fact that whereas a few years ago the generally accepted opinion was that the kidney involvement in caseous tuberculosis was usually an instance of ascending infection from the lower urogenital tract, the trend of recent opinion is that the primary focus is commonly situated in the kidney, the other organs of the genito-urinary system becoming secondarily involved.

Not rarely both kidneys are affected, though one is generally found to be in a more advanced state of disease than the other. This bilateral implication may be the result of simultaneous infection, or, as is most probable, usually the second kidney has become infected from the first by a descending and subsequent infection. The tuberculous disease of one kidney gives rise to a descending infection of its ureter, and finally the bladder, the mucous membrane of which, especially that about the trigone and fundus, becomes the seat of miliary tubercles or becomes infiltrated or ulcerated. The ureter of the healthy kidney becomes diseased and its mucous membrane thickened. This results in obstruction of its lumen and consequent hydronephrosis, which shortly becomes purulent. Thus, the tuberculous infection is presented to the pelvis of the healthy kidney, which soon succumbs to the attacks of the morbid agents. It is believed also that an urethral obstruction occasioning retention of urine may result in such disease of the second kidney, and this sometimes without affecting the bladder, the mucous membrane of which is notably resistant to the injurious influences of disease germs.

Primary tuberculosis of the kidney may occur at any age, but is more frequent in adult life and old age. Hamill, who has recently made a very exhaustive study of the disease as it appears in early life, and who has reported a case in one of the youngest patients on record—a child aged seven months¹—remarks that “it is relatively uncommon in childhood and exceedingly rare in infancy.” In the young the conditions probably are not identical with those found in later life. It appears that more males are affected than females. The etiologic factors are those of tuberculosis in general.

As already remarked, disseminated miliary tuberculosis of the kidney may not and usually does not give rise to any special symptoms, being but part of a general process. It is also true that primary miliary

¹ *International Medical Magazine*, 1896.

tuberculosis, as well as the ordinary variety of primary or caseous tuberculosis of the kidney, may persist for a considerable time without exhibiting any clinical manifestations of its presence. Rosenstein is authority for the statement that symptoms develop only when the mucous membrane of the pelvis and calices or ureter become the seat of inflammation, or when the caseous tubercles rupture into the pelvis; but, as evidenced by the case reported by us, even the implication of the mucous membrane of the pelvis may not give rise to any obtrusive indications. Rosenstein further asserts that the initial symptom of all cases (at least in all of the considerable number observed by him) was dysuria.

Laroche, a recent observer, feels justified in dividing all cases, according to their initial manifestations, into three classes—those which commence with hematuria, those which commence with pain, and those which commence with vesical symptoms; but, as further instanced by the case reported by us and by others, the condition may not be suspected until the accidental discovery of pus in the urine, during a careful examination of the renal secretion, suggests to the examiner the wisdom of examining the sediment for tubercle bacilli.

The symptoms which, developing, attract the attention of the patient usually are, in the beginning, either lumbar pain, turbid urine, hematuria, or, what the patient is more likely to observe, frequent and painful urination and hematuria. Any of these may occur alone, or there may be various combinations. Guyon was wont to refer to pus in the urine and frequent and painful micturition as the common symptomatic triad of urinary tuberculosis.

Lumbar pain may alone be present, and may either be spontaneous or provoked. The spontaneous pain may be very slight, amounting only to a so-called loin tire, or it may be very severe. It usually is limited to the lumbar region; and is present on, or at least is more severe on, the diseased side. It is not ameliorated by repose nor aggravated by movement. Sometimes the pain is lancinating, and even when so it may be confined to the lumbar region, or it may exhibit radiations in the direction of the ureter or into the testicle. Again, veritable crises appear at irregular intervals. They are of variable intensity and duration, and usually develop without manifest cause. They much resemble attacks of nephritic colic. The pain is generally aggravated by pressure—that is, by an examination of the renal region; but pain provoked only by an examination, at other times being absent, must be a rare indication of primary tuberculosis of the kidney.

Vesical and urinary symptoms have for a long time been known to accompany various diseases of the

kidney, despite the integrity of the bladder, and in primary tuberculosis of the kidney they are common. Frequent and painful micturition are common initial symptoms. At times pain may be intense, and situated at the neck of the bladder and accompanied by aggravated vesical tenesmus. Frequent urination, by night as well as by day, is often the first obtrusive symptom, even before the appearance of pus or blood appreciable to the eye in the urine. It often co-exists without painful urination, so that the patient may complain only of the mere annoyance of the great frequency of the act of urinating.

The presence of blood in the urine, often only to be detected microscopically, is probably the most frequent initial symptom, and may be present for a long time without any other manifestation of the disorder. Its production is readily accounted for by the fact that the bacilli, gaining access to the glomeruli, there set up a congestion which speedily progresses to rupture of the blood-vessels and consequent appearance of blood in the urine. It not only occurs early, but may continue also during all stages of the affection. Hematuria varies much in amount, and usually occurs without provocation—that is, it develops as it also ceases—spontaneously. The time of its occurrence and its amount are uninfluenced by movement or repose. It may be accompanied by severe pain, but even when profuse it is generally painless.

An examination of the kidney region often affords important diagnostic data in a suspected case. A kidney increased in size and painful is valuable evidence of the condition. The kidney unaffected with the tuberculous process may be enlarged from compensatory hypertrophy, but it is not painful. On percussion the area of kidney dulness is found to be enlarged; to facilitate the limitation of this area the employment of auscultatory percussion by means of the binaural stethoscope or the phonendoscope may be of value. Careful and thorough bimanual palpation alone will commonly enable us to distinguish enlargement, especially when the right kidney is involved. A kidney increased in size and painful may be observed very early in the disease. Later, there may be bulging of the loin and a tumor in the abdomen. The latter, depending upon the state of the pathologic processes in the kidney, varies much in size and other characteristics. The general conformation of the kidney is usually retained, but the tumor-mass may be very voluminous from a pyonephrosis consequent upon an obstruction of the ureter. If the several renal cavities reach the surface of the organ, the tumor-mass may feel bosselated. It may be resistant to pressure—that is, it may be hard or firm—or it may be elastic or fluc-

tuating. It may be so exquisitely painful to pressure that a satisfactory examination cannot be accomplished without the use of an anesthetic, which is usually contraindicated.

The most important symptom of the disease is the specific alteration of the urine. The characteristics of the urine are the reflection of the renal condition, and when a direct examination of the organ leads to indefinite results an investigation of its secretion furnishes positive signs. The urine may vary in amount. In the initial stages polyuria with frequent urination may be the sole symptom. Later, the quantity of urine depends in a great measure upon the state of the renal parenchyma. With destruction of the secretory tissue the urine diminishes in amount, but with an associated cirrhosis of the other kidney polyuria would be usual. The polyuria frequently is intermittent, and commonly is excessive after the removal of an obstructing particle from the ureter. The specific gravity of the urine generally is normal or somewhat subnormal. With marked polyuria it is of course very low. The reaction is acid. The urine is usually turbid when voided, but not infrequently is clear, and this sometimes is said to be especially the case during the painful crises, following which marked turbidity supervenes. Again, after turbid urine has been voided for a while it may suddenly clear and remain without sediment for some time. A sediment sometimes is deposited immediately upon the urine being voided; again, it does not deposit for some little time. This consists of pus, blood, epithelium (occasionally casts), connective tissue, elastic fibers, and detritus. Cholesterin plates, crystals of calcium carbonate, phosphate, and oxalate are sometimes found. The quantity of pus is variable, as also is the albumin, which, with the presence of pus, is of course always found, and in amount depends upon the pus and blood. With parenchymatous disease of either the tuberculous or the other kidney the percentage of albumin increases. Tubercle bacilli are always demonstrable in the sediment, at some time in the course of the case.

As the disease progresses constitutional symptoms develop, but it is remarkable how extensive the kidney disease may become before they manifest themselves. The patient, from the first somewhat pallid, with perhaps little loss in flesh, gradually grows weak and finally emaciated. There is present anorexia, with increasing anemia, and an evening rise in temperature. The patient eventually passes into a condition of decided cachexia, and death may thus occur without extension of the tuberculous process beyond the genito-urinary tract.

As illustrating how insidious in onset and symptomless in at least a portion of its course tuberculosis

of the kidney may be, the following case, occurring in private practice, is of considerable interest. In this, with the absence of the commonly observed frequent urination and hematuria (at least macroscopic), the first indication of any departure from health was the accidental discovery of pyuria.

W. R. S., male, aged thirty years, a dentist; weight, 145 pounds; family history good. Although he never had been robust, his health had always been fair. He was subject to "colds." He consulted Dr. Stewart for the first time during October, 1896, for the purpose of ascertaining the cause of the presence of albumin in his urine. Two and one-half years before he had taken out an insurance policy in a prominent company. At that time no abnormalities of the urine were noted. Six months before he came under observation he was insured in another and less prominent company. At this time, also, an examination of his urine was made, although by an examiner of less note than the first one. Shortly before consulting Dr. Stewart the patient desired to increase the amount of his life insurance. He was told by the examiner for the company first referred to that it would be impossible at that time, as his urine contained albumin.

A specimen of urine voided for examination was found to contain considerable pus, with albumin in amount only to be accounted for by the presence of the pus. The patient then recalled that for several months past the urine had commonly been turbid on voiding. To this he had not before attached significance. The patient's general health was good. In appearance, although well nourished, he was somewhat pallid. An examination of his blood disclosed a minor grade of anemia—hemoglobin, 65-per-cent.; erythrocytes, 4,000,000; no leucocytosis. There had been no loss of flesh, and his health, save for occasional slight attacks of bronchitis in winter, had always been good. Some five years previously he had had more or less bladder irritability, and this had persisted as a quite constant symptom for perhaps two years. The indications pointed to a mild chronic cystitis, for the development of which he could offer no explanation. He had not had gonorrhea. The bladder trouble, which at no time had been more than slight, had entirely disappeared about three years before he came under observation, by the use for a short time of suppositories consisting of belladonna, iodoform, and cocain. His health since had been very good. He had taken a great deal of outdoor exercise, chiefly a wheel. He was absolutely symptomless when seen for the first time for his present ailment. Irritability of the bladder was entirely absent, and had been persistently so for the past three years. He never rose at night to urinate, and rarely passed water over three times during the twenty-four hours. Hematuria had never occurred to his knowledge. The testicles and their appendages were to all appearances normal. There was no tenderness about the neck or other palpable portions of the bladder. The kidneys were not palpable, and tenderness in the region of their location,

even on firm pressure, was absent. The lungs and heart were normal.

The case was regarded as one of probable tuberculosis of the kidney, and a search in the urine for the tubercle bacilli was at once instituted. As a matter of routine, specimens of the urine were examined systematically in Dr. Stewart's laboratory, both by himself and Dr. A. A. Ghriskey, twice weekly, for seven weeks before tubercle bacilli were found. They were at last discovered by Dr. Ghriskey after their detection had been almost despaired of. At the end of this time, in the first specimen prepared, in one field only, a very large number were found in good-sized clumps, and others isolated. No other fields contained them. Evidently, those encountered were from a small shred of tubercle which had escaped into the urine.

The amount of urine voided, measured during several days at intervals, was found to run constantly between 1200 and 1500 c.c. Although turbid on voiding, it always became clear on standing. Specimens of the day's urine deposited a considerable sediment, consisting solely of pus. That passed on arising in the morning commonly contained pus in much less amount. The urine was always of acid reaction, of normal color and specific gravity, and the twenty-four hours' output habitually showed normal urea for body-weight and diet. Albumin was present only proportionately to the amount of pus, from which it was evidently derived. Microscopically, pus-cells abounded. Erythrocytes and bladder epithelium were not noted. Casts, in the many examinations made, were never encountered.

Thermometric observations, made twice daily in this case for over a month, showed no afternoon or evening rise of more than half a degree.

A diagnosis of presumed tuberculosis of the pelvis of the kidney was made and the patient kept under steady observation. During this time, as narrated, a search for tubercle bacilli was being made. The treatment consisted of a nutritious diet, fresh air, and a good deal of rest in recumbency throughout the day. Guaiacol benzoinate was employed internally, although not with any expectancy of benefit. Rather large doses were at first taken, resulting in mild toxic symptoms, the chief of which was a tendency to persistent chilliness, which ceased on discontinuance of the remedy. During the time it was being taken in full doses, on undue exposure to wet and cold, a chill occurred, followed by soreness in the region of the left kidney. When seen, the second day after this was experienced, there had been some diminution in the amount of urine voided (the quantity at this time not being measured). There was also a perceptible though slight fulness

evident in the loin anteriorly and laterally. The loin was somewhat tender on pressure. This was the only indication of hydronephrosis which had ever occurred. It was not repeated while he was under observation. Drinking freely of hot lythia water, and the employment of dry cups, followed by a poultice, caused a prompt subsidence of the symptoms.

The patient was under observation about three months, and, although now no longer under Dr. Stewart's care, is occasionally seen. Immediately on finding the tubercle bacilli in the urine the patient was urged to submit to a cystoscopic examination. The intention was to make an inspection of the bladder and to attempt catheterization of the ureters, in order to determine if the process, as was supposed, was limited to one kidney. If this suspicion was confirmed surgical interference was contemplated. But to the cystoscopic examination the patient would not consent, although the necessity of it was persistently laid before him, he being given to understand that no remedy could be curative of his condition. For this reason he consulted another physician, who held out to him greater promise of relief by drugs.

In this case the indications strongly pointed to a tuberculous pyelitis of one kidney, presumably the left. The ailment was probably of recent origin. It was unaccompanied by any indication of genito-urinary implication. The bladder symptoms, which were present several years previously, were of themselves highly suggestive, but should not be accorded undue weight, as they were not accompanied by any signs of renal derangement, the latter not developing until three years after the subsidence of the symptoms of vesical irritation. During this time the man had enjoyed good general health, and two examinations of his urine for life insurance had failed to disclose any indications of abnormality.

The diagnosis of primary tuberculosis of the kidney, particularly in the early stages, is frequently a matter of the greatest difficulty. The diagnosis may be at times most positive and again most uncertain. As in the two cases reported by us, the disorder may develop entirely without subjective symptoms. In the first case the tuberculous disease became engrafted upon a kidney the seat of chronic inflammation, and it was the presence of pus alone which suggested the wisdom of examining the sediment for tubercle bacilli. In the second case the first indication of abnormality was the accidental discovery of albumin in the urine when the patient desired an increase in his life insurance. The albumin was found dependent upon pus, and this again led to the examination of the sediment for tubercle bacilli. In this case it was only the persistent and frequently repeated examina-

tions for a period of almost two months which were finally rewarded by their detection. We cannot, therefore, in the diagnosis, too strongly accentuate the suggestiveness of the presence of pus—even in very small amount—in acid urine. The negative result of the examination of the urinary sediment for bacilli is not evidence of freedom from tuberculous disease. The examinations must be frequently and persistently made. The positive evidence only is of certain diagnostic importance. We confidently believe that the systematic, careful, persistent, and frequently repeated examination of the sediment of urine containing pus, even in small (microscopic) amounts, would more often permit of the recognition of the class of cases to which we allude. Rarely the urine may not be acid. It may have been rendered alkaline by some complicating condition, such as a cystitis induced by the employment of an unclean catheter. In a case of Dr. Stewart's, in which both kidneys were involved in the tuberculous process and were converted into mere pus-sacs, the urine had steadily remained acid until a catheterization, subsequent to operation on one of the kidneys, induced a cystitis, with ammoniacal fermentation.

The absolutely diagnostic sign of renal tuberculosis is the discovery of the tubercle bacillus. Care must be taken not to confound the smegma bacillus with the tubercle bacillus—an error which has led to the removal of a kidney the subject of calculus only, but presumably the seat of tuberculosis. Although the staining peculiarities of these bacilli are in many respects alike, the arrangement of tubercle bacilli into masses and groups (and this especially occurs in tuberculosis of the urogenital tract), is quite distinctive. The differential characteristics existing between the smegma and the tubercle bacilli have been especially studied by Grethe and von Leyden. The smegma bacilli are more readily decolorized by acidulated alcohol, losing their stain in two minutes, while tubercle bacilli do not. The smegma bacilli do not stain by Gram's method; the tubercle bacilli do. Grethe advises staining a cover-slip preparation first with carbol fuchsin, in the ordinary manner, and then with a concentrated alcoholic solution of methylene-blue. The smegma bacillus is thus stained blue, and is in marked contrast to the tubercle bacillus, the red color of which is not interfered with. When, after persistent search, the tubercle bacilli cannot be detected in the sediment, small flakes of tissue being especially looked for as most likely to contain them, the question of diagnosis may be settled by injecting some of the sediment into the anterior chamber of the eye or into the peritoneal or pleural cavity of a rabbit or guinea-pig. Of less value is gelatin or other plate-cultures from the

pus. The discovery of connective tissue and elastic fibers in the sediment merits careful consideration. While not diagnostic of tuberculous disease of the kidney, their presence still points to some extensive destructive disease in the kidney, and this is usually tuberculous or dependent upon a calculus. The suggestiveness of these is greatly increased when they are associated with degenerated particles of tubercles, which are so common in the urine and which generally appear as granular, amorphous masses. The diagnosis is further confirmed should there be present hematuria and indications of enlarged and painful kidney, lumbar pain, and vesicle irritability.



Tuberculous kidney converted into a pus-sac.

The evening elevation of temperature, as insisted upon by Rosenstein, cannot be so distinctive and essential a symptom as he would have us believe. In our second case the evening rise did not amount to more than the normal elevation, and in the first case the elevation which occurred might be regarded as dependent upon the other conditions present. However, an evening rise of temperature in association with acid urine containing pus is very suspicious of tuberculous disease. Confirming one's apprehension of a possible tuberculous disorder of the kidney is the discovery of similar disease of other parts of the genito-urinary system, as of the testicle, epididymis, vas deferens, seminal vesicles, prostate, bladder, ureter, and, in the female, the Fallopian tubes.

The presence of persistent lumbar pain, pyuria,

hematuria, and vesical symptoms all call for a careful investigation of the kidney. The impartial observer will hardly mistake the lumbar pain for a lumbago; nor should a pyuria with vesical symptoms be too long referred to a catarrh of the bladder. Frequent micturition alone or accompanied by hematuria, but without lumbar pain or other symptoms, is in itself very suspicious.

The distinction between calculary pyelitis or pyonephrosis and tuberculous disease, is at times a matter of some difficulty. Vesical irritability is common to both conditions, but the lumbar pain of calculus is usually of a duller, much more persistent character, aggravated by motion, and associated with attacks of renal colic in which the pain is agonizing, and radiates into the lower genitalia and into the thigh. When such attacks accompany tuberculous disease, they are generally much less intense. Hematuria is more severe in renal stone, and is often induced by exertion. Enlargement of the kidney is not so common, and only occurs when the stone becomes impacted in the pelvis or in the ureter, and this is usually late in the course of the disease. There then ensues a hydro- or pyonephrosis. The urine usually is highly acid in calculary disease, with a specific gravity normal or above; it usually contains, if the calculus be of uric-acid formation, an abundance of crystals of the same; if of calcium oxalate, similar crystals are likely to be present in excess. Casts are less frequent than in tuberculous disease, and the bacilli are, of course, not encountered. While good general health may be maintained for a long time despite the tuberculous involvement of the kidney, still the patient is more apt to show deterioration sooner with tuberculous disease than he is with renal calculus. For an exceedingly long time between the attacks of renal colic the patient's general health is excellent. In tuberculous disease, not infrequently some emaciation, anemia, night-sweats, loss of appetite, etc., develop rather early. The symptoms are sometimes indicative of vesical calculus, but from this the employment of a sound or the cystoscopic examination of the bladder readily differentiates. Both the renal and the vesical calculi may further be excluded by the results of a Röntgen skiagraph. Malignant disease of the kidney usually is easily eliminated from the possibilities. Frequent urination and hematuria are the only urinary symptoms common to both conditions, but they may be absent in malignant disease, and, if present, are apt to be prominent symptoms. The tumor generally grows very rapidly, renders the kidney firm to the touch, bosselated, and may lead to distortion of its shape. Sarcoma is the most frequent tumor, and it is in children that confusion is most likely to arise.

In all cases, and especially in women, in which such examination is now a matter of comparative ease, by the employment of the improved methods of Howard Kelly, a cystoscopic inspection of the bladder, and especially of the ureteral orifices, should early be carried out. In women, in addition, catheterization of the ureters is a matter of little or no difficulty, and may be essential to determine, by an examination of the urine from each kidney, the question of single or double involvement. Meyer holds that in a suspected case the use of the cystoscope will determine the diagnosis, even though repeated search in the urine for tubercle bacilli has been resultless.

Meyer¹ states that with involvement of but one kidney, by the cystoscope a permanently normal vesical mucous surface is seen with a single healthy ureteral opening. The orifice of the other ureter, however, is injected. "A number of circumscribed, clearly defined, inflamed areas of mucous membrane can be seen between it and the slightly hyperemic trigonum, leaving the interposed tissue unchanged in appearance." No other disease of the kidney or bladder presents a similar cystoscopic appearance, in Meyer's opinion.

The case, however, may be encountered before such a cystoscopic picture is evident. In any event, in addition to cystoscopic examination, catheterization of both ureters, when possible, should be accomplished to obtain separate specimens of urine. In its performance the chances of infection of the yet healthy kidney must be thought of and precautions taken to minimize the chances of such an accident.

Catheterization of the ureters in the male, unfortunately, is attended with great difficulty, and has been accomplished by few, either in this country or abroad. By these it has been done sufficiently often to indicate that, although not easy of accomplishment, it is at least, in experienced hands, practicable.

The prognosis in the vast majority of cases without operative interference is absolutely fatal. One can think of the possibility of the disease being limited to one kidney, the substance of which wastes and finally becomes the seat of "clinical but not anatomic recovery," while the other kidney remains intact. But such a possibility is very remote. The disease lasts for from six months to two or three years, as a rule, though instances of cases of much longer duration have been recorded. Death follows from cachexia, or it may be due rarely to uremia, from associated chronic nephritis, as in the case related by us.

The treatment of primary tuberculosis of the kidney, of whatever variety, is distinctly surgical; the

¹ THE MEDICAL NEWS, March 1, 1896, and May 1, 1897.

employment of tuberculin, the recently vaunted proto-nucleins, and drugs, such as guaiacol benzoinate, being without permanent benefit.

The surgical management of the case will not be here considered. Of the greatest practical importance is it, by careful hygienic and medical means, to place the patient, prior to operation, in as favorable a physical condition as possible, that any latent tuberculous process other than that in the kidney, such as might exist in the lungs, be not subsequently stimulated into activity through the depression attending operation.

Theoretically, apart from the ability to directly reach the morbid process and effect its removal, operation, the immediate effects of which are well understood, may not be without benefit on tuberculous lesions elsewhere, in a manner similar to that in which cure often results from mere incision in cases of tuberculous peritonitis. The most plausible explanation of the remarkable results obtained by mere exploratory celiotomy in cases of tuberculous peritonitis is that of Kischenski,¹ who regards the benefit or cure resulting due to the invariable post-operative leucocytosis. The beneficial effects in peritoneal tuberculosis, although in all probability so resulting, cannot be expected to repeat themselves in the same degree in tuberculous lesions elsewhere, for certain reasons (see, as to this, a paper by Vaughan, "Yeast Nucleinic Acid in Tuberculosis," *THE MEDICAL NEWS*, March 6, 1897, p. 300); yet much may be expected if the system is well fortified, prior and subsequent to operation, by supportive treatment. In these cases the free administration of the preparations of nuclein, and especially, as advised by Vaughan for use in general tuberculosis, of yeast nucleinic acid, may be of considerable advantage.

CLINICAL MEMORANDUM.

REPORT OF TWO CASES OF SYPHILIS, WITH REMARKS RELATIVE TO PTYALISM.

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IN ascertaining the proper dose of mercury for syphilitic subjects one necessarily is governed by certain signs and symptoms, and one of these, which is almost universally watched for at the present day, is sensitiveness of the gums. The majority of general practitioners and syphilographers begin the treatment with small doses and gradually increase the amount of the drug each day, directing the patient to close the jaws and press the teeth firmly together at intervals, and when the slightest sensation of tenderness or soreness makes its appearance they desist from increasing the dose, as the point of tolerance

has been reached, beyond which it will be dangerous to go. I desire to state as a result of long experience and observation, and in the face of recognized authority, that this soreness of the gums is a poor guide in the management of these cases, which fact the following reports will demonstrate:

A gambler, twenty-four years of age, a native of New York, came to me during the winter of 1895 suffering from tertiary syphilis. Four years before he had had a chancre, which was followed by the appearance of buboes in each groin, the left one suppurating. On this account he was confined to bed for nine weeks, during which time he was much troubled with nocturnal headaches, rheumatic pains, and fever, but there was no general eruption. He was treated for chancroids, but received no other treatment whatever. During December, 1895, after a night's debauch, a lesion made its appearance upon the glans penis. He at once consulted a surgeon, who proceeded without delay to thoroughly cauterize it, but the results were not such as he anticipated, inasmuch as the ulcer immediately became phagedenic, and in about ten days no less than two-thirds of the glans penis had been destroyed. On the second or third day after this lesion made its appearance, others appeared on different parts of the body, ranging in size from that of a one-cent piece to that of a silver dollar and even larger. These lesions were of the character of bullæ, and were followed in a few days by deep and ugly ulcers. He was at once put upon antisyphilitic treatment, but finding himself rapidly growing worse he left his home and came to the Hot Springs, and it was upon the 5th of January that I first saw him.

At that time he was markedly anemic, and was absolutely covered with ulcerations, some of them being an inch in diameter, and even larger. There were several large ulcers in the mouth and throat, and it was with much difficulty that he could swallow, his food having been limited during the previous two weeks to liquids. His weight was 113 pounds, as compared with his former weight of 138.

Inunctions of one-eighth of an ounce of mercurial ointment were employed for eight days and he was given thirty drops of the syrup of iodid of iron, well diluted, one hour after meals, and beef, chicken, or mutton broth, and as much sweet milk as he could take, four times daily. The throat was treated with antiseptics and the ulcers touched every other day with a twenty-grain solution of nitrate of silver, while an ointment containing ten grains of aristol was applied to the ulcers on the body. By the end of the first week desire for food had returned, and with it ability to sleep, which heretofore had been obtained by the use of hypnotics. The mercury was continued with most satisfactory results, for on the twenty-second day after his arrival only two lesions remained unhealed, the one upon the penis and one upon the forehead. His weight at that time was 128 pounds and he seemed in a fair way to recover. He was then placed upon a solution of iodid of potassium for ten days, in increasing doses, which he did not tolerate very well, and he was again returned to the use of iron and mercury. After

¹ *Centralblatt für Chirurgie*, 1893.

the second injection he became despondent and hysterical and talked of suicide. An intense soreness, with much swelling manifested itself in the esophagus, and it was with much difficulty that he could swallow at all. On the next day he was given another injection, which seemingly intensified all of the symptoms to an alarming degree, and at the same time complete anesthesia of both arms and legs from the elbows and knees down occurred. So complete was this anesthesia that he experienced no pain whatever when I ran a large needle not only into but entirely through the gastrocnemius muscle of the left leg. He was then directed to take vapor baths and to drink large quantities of water, and further medication was discontinued. After ten days sensation again was about normal. The succeeding history of the patient is uninteresting, as he recovered under tonic treatment without further difficulty. The point to be brought out here is, that during all this time never for a single moment were there any signs of salivation or of tenderness of the gums. This case is only one of many which I could cite as bearing upon this feature.

The second case presents an entirely different picture; it occurred in the person of a young married woman, twenty-two years of age, the mother of a child four years old. Three months after the birth of this child the patient contracted syphilis from her husband. She had the initial lesion, which was followed by non-suppurating inguinal adenitis, slight eruptions, and sore throat. Her husband permitted her to remain in this condition during nine months without treatment. She was thoroughly wretched, being crippled from the effects of rheumatism, and suffering intensely from sore throat all the time, her weight decreasing from 130 to 94 pounds. Finally, she was placed under treatment at her home in Ohio for a period of about four months, but failing to improve, was sent to the Hot Springs, where she took mercury and the iodids, so she states, during three months, but to no purpose except that her condition became worse. Salivation was invariably produced after a few days' use of mercury, and new ulcerations made their appearance in the mouth and throat. She then fell into the hands of a throat specialist, who employed local treatment and tonics, and with fair results, for about two months later she returned to her old home, but after remaining there two weeks the lesions developed again. She immediately came back to the Hot Springs and resumed treatment with the physician who had treated her before, but the ulcerations increased and finally were followed by a stricture of the esophagus which required dilatation. During this time her physician made a trial of practically all tonics and antisyphilitic remedies, and stated to me that the patient could not tolerate mercury in sufficient quantities to do her any good. She had had her teeth repeatedly attended to by a competent dentist, but the salivation resulting from the exhibition of mercury was so pronounced that she could neither eat solid food nor could she sleep. She remained in this condition during one year and a half, and then, on April 27, 1897, came under my care.

Her weight at that time was 108 pounds. She did not

appear to be anemic, but tired easily upon exertion, had a poor appetite, and was constipated. The heart, lungs, kidneys were normal. The spleen was slightly enlarged. There was one ulcer upon the left tonsil, one upon the tongue, and a third upon the lips, while the mouth and throat were covered with scars. An examination of the blood showed a reduction of hemoglobin to 35 per cent. and a diminution of red blood-corpuscles to less than two-thirds the normal number.

An antiseptic mouth wash was prescribed for frequent use, and the ulcers were touched every second day with a twenty-grain-to-the-ounce nitrate of silver solution. The blood was examined every fifth day. Ten days after the beginning of this treatment another ulcer made its appearance low down in the pharynx, and the others showed no improvement. The amount of hemoglobin had been reduced to 20 per cent., and the woman's strength was so impaired that it was only with difficulty that she could walk. During this time her gums were so sensitive that they bled freely whenever she attempted to eat. She was then given sixteen drops of a preparation of gold and mercury, one hour after each meal, with one tablespoonful of a solution of peptonate of iron and manganese. The latter preparation was discontinued on the second day, as it gave rise to severe headaches, and the mercurial preparation was increased to twenty drops thrice daily, but on the fourth day she again became intensely salivated. I then treated the gums with a 4-per cent. solution of cocaine, and with a strong, stiff tooth-brush literally tore them to pieces, afterward allowing the blood to flow freely. The tissues were then treated with an antiseptic solution, followed by alcohol. This treatment was repeated daily, and the mercurial solution, instead of being discontinued, was increased in quantity until she was taking thirty-five drops a day.

On May 12th the hemoglobin registered 25 per cent., the red corpuscles being as before. On May 17th the hemoglobin still registered 25 per cent., but on the 22d it was 30 per cent., on the 27th 35 per cent., on June 1st, 40 per cent., June 6th, 45 per cent., June 11th, 55 per cent., June 21st, 70 per cent., June 26th, 70 per cent., and on July 1st, 80 per cent. At the latter date the number of red blood-corpuscles was normal, the patient's weight had increased to 131 pounds, and she felt better than for several years, in fact, since the beginning of the disease.

These cases are of interest on account of their wide dissimilarity. The first patient took mercury, with excellent results up to a certain time, when poisoning by the drug occurred and very nearly proved fatal. At no time did signs of pyalism become evident nor did the gums become sensitive. The second patient, on the contrary, became salivated whenever mercury in even small doses was given, yet she was made to take large quantities of the drug with most satisfactory results. There are few patients who will use a brush on tender gums with sufficient force to be of service, and I make it a rule, no matter if the teeth and gums appear to be in perfect condition, that every syphilitic patient must visit a dentist and have the teeth thoroughly overhauled and then, in my

presence, scrub and brush the gums vigorously. I feel assured that with these precautions, and watching carefully the condition of the blood, we have little to fear in giving even very large doses of mercury.

MEDICAL PROGRESS.

Spontaneous Rupture of the Aorta.—AMES AND TOWNSEND report in the *Maryland Med. Jour.*, July 3, 1897, a case of spontaneous rupture of the aorta without aneurism, occurring in a man aged seventy-five, due to a crack in a calcareous plate in the aortic wall not far from the valves. From the meager history of the case obtainable, it appeared that the man died suddenly while at work. Some hundred such cases have at one time and another been reported, and though the subject has little clinical importance, it is interesting to notice the points which a study of these published cases brings out. It is probable that an examination of the many cases of heart failure and sudden death would show that many of them are really cases of ruptured aorta, and that this accident is by no means so rare as has generally been supposed.

Two-thirds or more of all cases occur in men, and almost as large a proportion in the ages between thirty and sixty. Probably in every instance the aorta is diseased. This has been denied by some, but reason and the cases reported both agree in sustaining this theory. Granted a diseased vessel, and most likely a hypertrophied heart as well, it is evident that a strain, such as produced by a fit of anger, or an attack of vomiting, will increase tension beyond the power of the weakened aorta to withstand it. In 60 per cent. of the cases the rupture is near the heart, while in 20 per cent. it is in the curved portion of the vessel. Rupture of the abdominal aorta is most rare. The explanation of these statements was long ago given by Rokitsky and Broca, who insisted that the recoil force of the column of blood in the aorta might be sufficient to tear up the intima, if diseased, and sometimes the media as well, just above the aortic valve segments.

The most constant symptom is pain, severe and tearing in character and located in the chest, though radiating to the neck, shoulders, or abdomen. Of other symptoms, dyspnea, collapse, feeble, irregular pulse, vomiting, giddiness, chilly sensations, cough, drowsiness, and hemoptysis are occasionally noted.

The Etiology and Pathology of Acute Peritonitis.—FLEXNER publishes, in the *Maryland Med. Jour.*, June 25, 1897, an analysis of 101 cases of acute peritonitis, which throws a little additional light on this still too obscure subject. There is a great probability that the capacity of resistance of the normal peritoneum is closely associated with the preservation of the integrity of the normal peritoneal covering. We may disregard for the present, as not yet proven, the idea of a non-infectious or chemical form of peritonitis.

An examination of these 101 cases of acute peritonitis from the autopsy records of Johns Hopkins Hospital, in which bacteriologic examinations were carried out, shows that these cases may be divided in three groups:

1. **Primary or Idiopathic Peritonitis.**—In these the infectious agent did not enter from without as a result of a surgical operation, or from within through the medium of a diseased viscus. There were 12 of these cases, and the predominating pathogenic bacteria were pyogenic strepto- and staphylococci. All but 1 were mono-infectious.

2. **Exogenous Peritonitis.**—These were all cases of post-operative peritonitis, in which the germs did not enter from a diseased viscus but were introduced at the time of operation. There were 33 cases of this class, 25 of which were mono-infectious, and 8 polyinfectious. The predominating organisms here were also the cocci, but bacilli were more common than in class 1.

3. **Endogenous Peritonitis.**—In these cases the infection comes from the intestine. There were 56 in all, 23 being mono-infectious and 33 polyinfectious. The predominating micro-organisms were the bacillus coli communis and the streptococcus pyogenes. The former occurred in 43 of the 56 cases, but it was present alone only 8 times. The latter was present 37 times, but only 7 times alone. There was also a much greater variety of other bacteria present than was the case in the other two classes.

Sarcoma from an Irritated Mole.—GRANT mentions in the *Intercolonial Med. Jour. of Australasia*, May 20, 1897, an instance of sarcoma developing from a mole as a result of thrice-repeated injury. The patient, a healthy man of twenty-seven, had had a black mole on his right arm since birth. At the age of twenty-four it was torn by the horn of a sheep, but healed rapidly. A little later it was again injured, and increased to the size of the finger tip. After a third bruise, received eighteen months after the first injury, it was still larger, and several secondary spots had appeared in the vicinity. All of these growths were excised. There was no local recurrence, but six months later a lump was removed from the right axilla. Within six months from the removal of this nodule the skin of the arms and trunk was studded with melanotic nodules of various sizes and at different depths, and there was only the outlook of a speedy death.

Sterilization of Rubber Catheters.—A simple and practical method of sterilizing soft rubber catheters is given by WOOLF, in the *Centralbl. f. d. krank. Harn. u. Sexual-organe*, vol. viii, p. 285. After use, the infected catheter is washed with water and put into a 5-per-cent. formalin-glycerin solution. There it remains during one day and is then put into glycerin. These substances are kept either in long test-tubes, or in suitable lengths of inch glass tubing with corked ends, each catheter having its own tube. The transfer from one tube to the other is made without touching the vesical end of the instrument. For use, the catheter is taken out and dipped without washing into a glass containing a 20-per-cent. solution of sugar in glycerin. This lubricates it well. All of these solutions are easy to sterilize by boiling, and the catheters may be boiled in their tubes, with or without a water bath, without injury.

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SATURDAY, AUGUST 21, 1897.

APPARENT DEATH AND PREMATURE BURIAL.

DURING the passed year this subject has been widely discussed on the continent of Europe and in the English press, and has engaged public attention to an unusual degree. This has resulted in the formation of societies whose avowed purpose is the prevention of premature burial. Cases of *live* sepulture are certainly rare in all civilized countries; nevertheless, no experience can be more horrible than that of being buried alive, and the occurrence of a single case in a generation is sufficient to stimulate the most scientific research into preventive methods. Ordinarily, a person is pronounced dead when signs of respiration have disappeared and the heart has ceased to beat. Cases, however, are upon record in which people have gone into a state of trance in which these tests have been set at naught, and the patient has again resumed the active functions of life. Since the state of trance and hypnotism has been more generally recognized by the profession, greater care has been observed in pronouncing upon suspicious cases, and in some countries in Europe the only absolute sign of death which is recognized is advanced or advancing decomposition. To apply

this test in all cases, it would be necessary to have skilfully managed waiting mortuaries in which bodies could lie until decomposition begins. Such mortuaries are to be found in certain parts of Austria and Germany, but to be of universal application, they would have to be very numerous, and this would involve greater expense than the necessity of the case seems to justify.

The late Sir Benjamin Richardson, who had made the condition of trance, catalepsy, and other death-counterfeits the study of investigation, formulated the following tests as necessary to unequivocally establish the reality of dissolution: (1) Respiratory failure, including absence of visible movements of the chest, absence of the respiratory murmur, absence of condensation of moisture in the breath. (2) Cardiac failure, including absence of arterial pulsation, of cardiac motion, and of cardiac sounds. (3) Absence of turgescence, or filling of the veins, on making pressure between them and the heart. (4) Reduction of the temperature of the body below the normal standard (98° F., in the axilla). (5) *Rigor mortis* and muscular collapse. (6) Coagulation of the blood. (7) Putrefactive decomposition. (8) Absence of red color in semitransparent parts under the influence of powerful rays of light. (9) Absence of muscular contraction under the stimulus of galvanism, of heat, and of puncture. (10) Absence of the red blush of the skin after subcutaneous injection of ammonia (Montiverdi's test). (11) Absence of the signs of rust or oxidation of a bright steel blade, after plunging it deeply into the tissues (the needle test of Cloquet and Laborde).

In a book written on the subject of premature burial, a review of which appears in *La Médecine Moderne*, February 24, 1897, the author, Icard, maintains that the only certain proof of death is the *absolute* cessation of circulation. He emphasizes absolute because the pulsations of the heart may be imperceptible although the circulation still continues. Icard believes that he has discovered in *absorption* an infallible method of determining whether or not circulation has ceased. If any substance be injected into a corpse it will remain at the point of injection. If circulation is present, no matter how feeble, a portion of the injected substance will be carried away, and its presence may be demonstrated in other portions of the body; if this takes place the individ-

ual is not yet dead, no matter what other signs of death may exist. The substance used for this purpose should be soluble in water, non-toxic, easily recognizable in minute quantities, and one which is not present in any portion of the human body either normally or accidentally. There are many substances which fulfill these requirements, such as the ferrocyanids of sodium and potassium, some of the iodids, etc., but the best of all is fluorescein. Dissolved in an alkali, this substance produces a beautiful fluorescent green, while its power of coloring is so strong that a sixth of a grain will distinctly color 100 gallons of water. By experiments upon dogs, cats, rabbits, and guinea-pigs, Icard found that 10 grains of fluorescein are more than sufficient to produce in an adult a characteristic reaction. In order, therefore, to determine the death of a person, 2 drams of the following solution are injected hypodermically:

R. Fluorescein	3 ij
Sodæ carbonat. . . .	3 ij
Aquæ distil., q.s. ad. . .	5 ij.

If circulation is present, there will become evident an emerald-green color of the cornea of the eye, of the skin, and of the urine. The coloration of the blood itself is determined by passing underneath the skin one or two cotton threads in order to soak up blood and serum. These are then placed in a test-tube and two teaspoonfuls of water are added, and the mixture is boiled to destroy the red coloring matter of the blood. If there is any fluorescein present, its green color will become apparent.

ECHOES AND NEWS.

A Horse with False Teeth.—A valuable horse belonging to a Louisville, Ky., man enjoys the distinction of being the only horse wearing false teeth.

Michigan Peppermint.—It is said that more than one-half of the peppermint, spearmint, tansy, and wormwood consumed in the entire world is raised and distilled in Michigan.

Chlorate of Potash as a Poison.—Another death from an overdose of chlorate of potash is reported from Vienna. The present case is that of a woman who took 25 grams of the drug.

Quarantine in New York.—The first quarantine in the harbor of New York was established in 1737, and was due to reports that smallpox and spotted fever were raging in South Carolina.

Diphtheria from Chewing Gum.—A family of children at Westchester, Pa., was infected with diphtheria by chewing gum which had been chewed by a child while suffering from the first symptoms of the disease.

Women Medical Students.—The College of Physicians and Surgeons of Chicago, Ill., will henceforth admit women students, by order of the trustees of the University of Illinois, of which it was recently made a department.

Where Life Is Long.—It is said that in Norway the average length of life is greater than in any other country on the globe. This is supposed to be due to the fact that the temperature is cool and uniform throughout the entire year.

Death of Dr. A. F. E. Krog.—Dr. Albert F. E. Krog was found dead in his office at 233 East Fourteenth street, New York, on the 10th inst. He had been an invalid for some time and was quite feeble. Death was due to heart disease.

Memorial to John and William Hunter.—At a public meeting recently held in Glasgow it was proposed to collect a fund for a memorial to John and William Hunter, the great physiologists. The subscription list was headed by a gift of \$4250.

A Special Hospital for Patients Suffering from Tinea.—The Lailler Hospital and School, for children suffering from tinea, has just been opened in Paris. It affords accommodation for 300 patients, and its maintenance will cost \$40,000 annually.

Facts about Bananas.—The *Medical Times* says that bananas should never be eaten raw, for they are full of germs, besides being indigestible. Three bananas, weighing one pound, when baked equal in nourishment twenty-six pounds of bread.

Death's Big Harvest.—Bombay officials are greatly alarmed over the death-rate of the past week. Of the 1071 deaths 220 were due to cholera and 18 to plague. The total death-rate is equal to 65.61 per thousand, or double the normal rate.

Death of Dr. Arthur S. Kennedy.—Dr. Arthur S. Kennedy of Auburn, N. Y., recently lost his life as a result of the accidental discharge of his gun while hunting. Dr. Kennedy was fifty-five years of age and had retired from active practice some time ago.

Memorial to Greig Smith.—The colleagues of Greig Smith have decided to make an appeal for subscriptions to provide a bust or medallion, to be placed in the Bristol Museum or in the operating-theater of the Bristol Royal Infirmary, to perpetuate his memory.

Inflated the Baby.—A little boy of Beaver Falls, Pa., placed the tube of a bicycle pump in a baby's mouth and began pumping in air. The child's stomach swelled like a balloon, and in a few minutes she became unconscious. The mother arrived in time to save the child's life.

A Gold Medal for Professor Behring.—A gold medal and a purse of 1000 marks have been presented by the University of Würzburg to Professor Behring for his discovery of the diphtheria antitoxin, which is considered the most important discovery made during the past three years.

Typhoid among the Striking Miners.—The news comes from Pittsburg that typhoid fever in a mild form is raging in the vicinity of Camp Determination at Turtle Creek. Sixty cases, with five deaths, have occurred so far. Bad water and a lack of sewerage are the cause of the epidemic.

Poorhouse Scandal.—Charges of ill-treatment and neglect have been made against the keeper of the poorhouse at Passaic, N. J. Upon investigation the place was found to be in a filthy condition, alive with vermin, and the inmates ill-fed and neglected. The keeper will probably be discharged.

Needle in a Baby's Back.—A Morristown, N. J., baby was being undressed recently, when the nurse scratched her hand on a sharp point protruding from the child's back. Upon investigation this was discovered to be the point of a needle, which, upon being withdrawn, was found to be unbroken.

Skulls in the Street.—A heavy rain storm swept away part of the embankment of an old cemetery at Paterson, N. J., last week, and, as a result, several skulls and other human bones were washed out of graves and swept into the street. They were turned over to the coroner, who had them reburied.

Black Clothing Unhealthy.—A physician in Philadelphia recently told a woman who consulted him that he would not prescribe for her if she persisted in wearing black or somber clothing, as he considered her "peculiarly nervous and neurotic condition" partially due to the depressing effect of her garments.

A Prize for the Discovery of the Bacillus of Yellow Fever.—One-half of the prize of \$220,000 which the government of Brazil is to present to the author of a work demonstrating the existence of the bacillus of yellow fever and to the discoverer of an effective treatment of the disease, will probably be awarded to Sanarelli.

Bogus University Degrees.—It seems that the National University of Chicago is pursuing its nefarious business across the water. The British Government is considering the advisability of prosecuting, on the charge of obtaining money by false pretenses, the agents of this institution for offering to confer degrees for \$5 each.

To Rid Cattle of Texas Ticks.—In order to rid them of ticks, and in this way destroy the germs of Texas fever, 200 cattle were dipped recently in chloronaphtholeum at Fort Worth, Tex., under the direction of Dr. Nergard, of the Department of Animal Industry. A quarantine against infected cattle has been declared in St. Louis.

Fourth Congress for the Study of Tuberculosis.—The fourth congress for the study of tuberculosis will be held in Paris

during the last week of July, 1898. The following questions will be discussed: "Sanitaria for Consumptives;" "Serums and Toxins;" "The X-ray in Diagnosis and Treatment," and "Tuberculosis in the Lower Animals."

No More Smallpox.—Dr. Benedict, of the Bureau of Contagious Diseases, reports that there have been no cases of smallpox reported in the city of New York since July 14th, and that the small epidemic of the disease which caused a little uneasiness has been entirely crushed out. In all, seventy-two cases were reported between March 14th and July 14th.

Vaccine for Drunkenness.—The news comes from San Francisco that Dr. F. W. D. Evelyn of St. Luke's Hospital of that city has made public the results of fifteen-years' experiments by which he claims to have found a certain cure for drunkenness. The remedy consists of the inoculation of a substance obtained from the blood of a horse into which alcohol has been injected.

Science and Ice Cream.—The British Institute has been investigating ice cream and has discovered that the kind which is sold on the street, popularly known as "hokey-pokey," contains various insects, legs, wings, straw, hair, coal-dust, woolen and linen fiber, tobacco, muscular tissue, and 7,000,000 microbes per cubic centimeter. The better grades of ice cream were found to contain numerous microorganisms and ptomaines.

For People Buried Alive.—An apparatus has been constructed by a Russian inventor by which anybody who is unfortunate enough to be buried alive can give warning of the fact. The device consists of a button situated on the inside of the coffin immediately over the breast of the individual placed in it. If he should come to life and begin to breathe, the expansion of the chest will press the button and set going an alarm bell in the office of the superintendent of the cemetery.

Mosquitoes as Carriers of Infection.—The remarkable number of serious cases of poisoning from mosquito-bites which have been reported during the present summer, adds additional confirmation to the theory that mosquitoes may act as carriers of infection. The unusual humidity of the atmosphere, due to the continuous rains combined with the high temperature, have favored the development of mosquitoes and they have been unusually abundant and vicious in every part of the country.

Queens County Almshouse Scandal.—Official investigation of the management of the Queens County almshouses has brought to light a shocking state of affairs at the Barnum's Island almshouse. One of the women inmates has given birth to four children during her stay there, and another woman was found who had recently given birth to one. Utter disregard of even ordinary methods of disassociating the sexes is shown in all the institutions, and at Barnum's Island the male and female wards are not even separated by adequate partitions.

The Rocky Mountain Interstate Medical Association.—The organization of this new Association, composed of mem-

bers of the regular profession residing in Colorado, Utah, Montana, Idaho, Wyoming, New Mexico, and Arizona, was perfected at Salt Lake City, Utah, on July 24th, by representatives from four of the States named. Dr. C. P. Hough of Salt Lake City, was elected president; Dr. C. K. Cole of Helena, Mont., first vice-president; Dr. Clayton Parkhill of Denver, Col., second vice-president, and Dr. E. Stemer of Rawlins, Wyo., secretary and treasurer. The first meeting will be held at Denver in June, 1898, during the meeting of the American Medical Association.

Experiments with a Human Body.—In order to ascertain whether it is possible for a human body to be completely dissolved by submerging it in a solution of crude potash, the experiment was tried recently at the Rush Medical College, Chicago, and the results may enable the State of Illinois to convict one Leutgert, a sausage manufacturer, who is accused of killing his wife and making away with the body by subjecting it to the action of potash. The experiment showed that after a cadaver had remained in the bath for a specified length of time, nothing remained of it but a few bits of bone, which, presumably, also would have become dissolved if allowed to lie longer in the solution.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

RESULTS OF THE STATE BOARD EXAMINATIONS—THE AMERICAN PUBLIC HEALTH ASSOCIATION'S MEETING—A LOW DEATH-RATE FOR PHILADELPHIA FOR THE FIRST SIX MONTHS OF 1897—A NEW GROUP OF BUILDINGS FOR THE PENNSYLVANIA INSTITUTION FOR THE BLIND—VITAL STATISTICS FOR THE WEEK ENDING AUGUST 14TH.

PHILADELPHIA, August 14, 1897.

OF the 445 candidates for licenses to practise medicine in Pennsylvania, who were examined by the State Board of Medical Examiners in June, 1897, eighty-three failed to pass successfully. Of the total number of candidates twenty were women, of whom seven failed.

This high percentage of failures, which is over five per cent. in excess of that met with in previous examinations, cannot be explained by the plea of the severity of the examination, for it is generally understood that the questions asked of this year's candidates were eminently fair and practical. The results, therefore, must be taken to demonstrate that there is a need for a more thorough preliminary training for students of medicine, and this is a need which medical colleges who care anything for the reputation of their graduates before the public cannot afford to disregard. It is gratifying to remember, however, that such steps have been, or are being, taken by the medical schools of this State generally, although these measures, if we gauge their efficiency by the reports of the State Board Examiners, have apparently been too recently carried out to visibly affect the showing of their graduates. Another year, or another two years, at the

most should remedy this very apparent flaw in the requirements for the doctorate in medicine.

The local committee of the American Public Health Association, which is to hold its twenty-fifth annual meeting in this city next October, has completed the arrangements for the forthcoming meeting by announcing the various committees on arrangements, finance, exhibits, and other departments, and by mapping out the work of the Association as far as it is possible for a local committee to do. The secretary, Dr. Benjamin Lee, gives prominence to the fact that the local and State membership of the Association is not at all what it should be, and he is making determined efforts to secure the accession of a large number of new members from Pennsylvania and neighboring States before the time set for the Association's coming meeting. From present indications, the scientific work of the meeting promises to uphold the high standard of excellence which has attended the transactions of this body during the twenty-five years of its existence, and it is proposed to give no small thought to the social aspect of the convention—a matter in which Philadelphia takes a certain amount of pardonable pride.

With a population of 1,215,000, the death-rate in Philadelphia for the first six months of 1897 has been only 18.14 per 1000 of population, while for the past ten years the average mortality has ranged from 20.64 to as high as 22.86 per 1000. The decrease has, however, been almost entirely confined to adults, for while a comparatively cool summer caused a decided falling off in the usual number of deaths from cholera infantum and other diseases which usually cause such a high death-rate in infants, there has been a notable increase in deaths from diphtheria and scarlet fever, with the result that the mortality in children has not been lowered.

It is a notable fact that among adults, for the first time in the history of the city, pneumonia has taken first place as a cause of death, supplanting pulmonary tuberculosis, which has heretofore ranked far ahead of other diseases in the number of its victims. This is held to be due, at least partly, to the stringent measures against tuberculosis which have been taken for some months past by the Board of Health, both in the general distribution of printed matter on the subject, and in the rigid inspection of food articles exposed to the influences of this disease.

Plans have been completed for the new buildings of the Pennsylvania Institution for the Blind, which are to cost in the neighborhood of \$300,000. The main building is to be built on the old Spanish monastery plan, surrounding two handsome cloisters; it will measure 361 x 222 feet, and will contain the class-rooms, and pupils' dormitories, together with a large auditorium and gymnasium. The construction of several detached buildings is also contemplated, to be used for various purposes. The main building will be modeled on historic lines, with broad stone corridors, and will contain the latest facilities for the instruction of the blind, many of which originated in this well-known institution.

The number of deaths occurring in Philadelphia for the week ending August 14th, was 406, a decrease of 6 from the preceding week. Of the total deaths, 173 occurred

in children under five years of age. There were 21 deaths from diphtheria, 4 from scarlet fever, and 9 from typhoid fever. The total number of new cases of contagious diseases for the week was 202.

LETTER FROM ATHENS.

[Special Correspondence of THE MEDICAL NEWS.]

THE MEDICAL DEPARTMENT OF THE GREEK ARMY—ABSENCE OF ORGANIZATION OF FIRST AID TO THE INJURED—THE WORK OF THE RED CROSS SOCIETIES—ABUSE OF THE GENEVA INSIGNIA—RATIONS AND CAMP SANITATION—DIFFICULTIES IN THE WAY OF OBTAINING TRUSTWORTHY INFORMATION AS TO MORTALITY FOLLOWING INJURY AND OPERATIONS.

ATHENS, GREECE, July 28, 1897.

ARMED with a card of introduction from the American minister, and accompanied by Dr. Achilles Rose of New York, who is spending the summer in Athens, and who acted as interpreter, a visit was made to the War Office, where we were most courteously received. Upon making known our desire to learn something of the organization and work of the Medical Department of the Greek army during the late war, we were referred to the surgeon-general's office. We found that functionary installed in a 12 x 14 apartment, and, from the absence of evidences of system, we were in a measure prepared for what followed our inquiries. A most courteous and obliging young medical officer was assigned to our service, and our investigations commenced at once.

Very little information as to the organization of the Medical Corps or the methods of relief to the injured upon the field could be obtained. It was very evident that the outbreak of hostilities found the Medical Department of the Greek army as little prepared for the work at hand as the other departments. We had previously learned from some Red Cross nurses sent out from England, and who had just returned from the scenes of the recent conflicts in Thessaly, that there was practically no first aid near the actively engaged lines. As a result of this, many died from hemorrhage who, without doubt, could have been saved by simple provisional methods. The presence of the first aid organizations was practically forbidden. This was not denied at the surgeon-general's office, and was confirmed by statements obtained from patients in the hospitals whom we afterward saw. According to the latter, five days elapsed, in some instances, between the reception of the injury and the first dressing.

It is probably true that the medical department was not only greatly hampered by absence of efficient organization, but by lack of proper facilities for carrying on the work as well. We were not able to obtain an inspection of a field outfit of instruments, and the failure of our efforts in this direction aroused the suspicion that there was very little in this line to show us. At one of the hospitals we were shown what would have been a fair outfit for a small civil hospital, with the statement that it had been the gift of a wealthy foreign lady who sympathized with the Greeks in their struggles against the Turks.

The English Red Cross Society furnished six surgeons.

In addition to this a corps of trained nurses was sent out by the London *Daily Chronicle*. These did most efficient work. Besides this the German and French organizations furnished each a complete hospital outfit of 120 beds, with surgeons, assistants, and nurses.

The charge has been made that the Turks refused to respect the Geneva Cross. I am informed that this arose from the fact that the Greek irregulars employed the insignia to cover an attack upon the Turkish troops, and that, naturally enough, the latter were thereafter suspicious of the display of this emblem.

The rations of the Greek soldiers consisted mainly of bread and cheese. Camp sanitation is said to be almost unknown. Laxity in respect to the latter is not to be wondered at when it is considered that even the ordinary discipline of camp life is disregarded. Roll-call is more honored in the breach than in the observance, and drills, inspection, and review are almost unknown.

It is impossible to ascertain the mortality among those injured in battle. This arises partly from the absence of records available for the purposes of study, and partly from a disinclination on the part of the combatants to acknowledge serious losses. Judging from the impressions received, the opportunities for studying results of gunshot wounds and their treatment afforded by this conflict will be comparatively slight. As far as the available sources of information could furnish knowledge upon the subject, it was ascertained that 3000 wounded were cared for in Athens. These were transported to the city from the districts where the fighting took place, partly by boat and partly by wheeled ambulances. No railroads were available for the purpose. Of these, about one-half were cared for in the Ecolé Hypaxiomaton and the Ecolé Evelpidon, two government military schools of Athens which were converted into temporary hospitals for the purpose. The remainder were cared for in the Military Hospital and the Evangelical Hospital under Professor Galvani.

Nearly all operations were performed before the patients were brought to Athens, and, therefore, it is impossible to ascertain anything concerning the immediate mortality following these, or that occurring among those not operated upon. Those who survived the shock and hemorrhage, in both instances, as well as the transportation over mountain roads, were naturally the most vigorous subjects, and the most likely to recover.

A round of the hospitals occupied portions of two days: Most of the injured were suffering from gunshot wounds, and these from wounds inflicted by the comparatively heavy Peabody-Martini rifle ball. This arm seems to have been generally used by the Turkish troops. Here and there a smaller wound of entrance suggested a Mauser bullet, but these were few and not easy of identification. The Greek surgeons spoke with pride of two cases of gunshot wounds of the abdomen, one of which involved the liver, and which recovered without laparotomy. A shrug of the shoulders and a roll of the eyes were the only answers to the query as to how many had died following such injuries.

From the stories current of the fierceness of the Turkish cavalry charges it was expected that wounds from cut-

las strokes and saber thrusts would be presented. But one such was shown us. A Greek officer informed us that in no instance did a hand-to-hand conflict take place; hence the absence of this class of injuries. Only two cases of shell and shrapnel injuries were found.

Most of those shown were well on the road to recovery. In most instances there were evidences present of suppurative action, although some surprisingly good results following penetrating wounds of joints were exhibited. The first dressing consisted of iodoform gauze, cotton, and gauze bandages wrung out in sublimate solution. Whenever the emergency would permit the surrounding parts were cleansed and shaved as a part of the treatment. In cases complicated by fracture the parts were supported by means of ready-made splints of French manufacture.

Most of the Greek military surgeons have received their education in part in Germany. The shortcomings of the medical department are due, not so much to lack of intelligence as to absence of system and organization, without which, in the face of the dire emergencies of war, the efforts of the highest order of talent or the brightest flashes of genius are doomed to disappointment and defeat.

GEORGE RYERSON FOWLER, M.D.

OUR VIENNA LETTER.

[From our Special Correspondent.]

THE NERVOUS LESIONS OF INFANTILE CONVULSIONS—PROFESSOR PALTAUF'S DEMONSTRATION THAT ONLY A SPECIFIC STREPTOCOCCIC SERUM IS OF THERAPEUTIC VALUE—THE DREAD OF LEPROSY CONTAGION.

VIENNA, August 1, 1897.

A RECENT report from Professor Obersteiner's Laboratory of Nervous Pathology here in Vienna seems to show that there are certain definite nervous changes concerned in the immediate etiology of infantile convulsions. The specimens examined came from two nurslings who had had characteristic convulsions. The examination of the spinal cords, after staining by Marchi's method, clearly showed degenerative processes in the anterior nerve-roots, the degeneration reaching to the anterior horns, and being especially noticeable in the cervical and lumbar enlargements. The upper cervical roots were but very slightly affected, and those of the dorsal region not at all. While the hardening in Müller's fluid, necessary for the carrying out of Marchi's method of examination, made it impossible to apply that of Nissl, the most reliable test for the presence of cellular degeneration, according to the older rules of staining, there seemed to be degenerative processes at work in the anterior horn cells as well, though in the initiative stage. Dr. Zappert, who reports the findings, has examined the cords of more than one-hundred infants, and considers that the presence of such changes is very frequent. The motor-nerve apparatus in a rapidly growing child seems to be intensely sensitive to toxic influences. Seemingly slight infections produce sufficient toxins to affect tissues which react so easily.

Here, as in other departments of medicine, the rôle of idiopathic disease is decreasing in importance, that of in-

fection taking its place. In almost the same way, also, reflex troubles supposed to be due to intense irritation of sensitive nerve endings, reacting on corresponding or sometimes even distant motor nerves, are being brought more and more under the head of infectious processes. Teething and summer diarrhea are the mediate and not the immediate causes of convulsions, the weakened state of the system, with consequent infection and absorption of toxins, instead of the intense irritation of peripheral nerves being the cause of the nervous explosion along motor-nerve tracts.

It is thought that like changes in spinal nerve cells and roots will be found as the explanation of such affections as diphtheritic paralysis and pseudoparalysis syphilitica, the general process in these conditions being a similar, though much more intense one than that observed in the production of ordinary infantile convulsions. That anterior poliomyelitis is a consequence of infection from intestinal toxins, our American statistics, showing its increased frequency during the summer months, have long since made clear. This demonstration that probably every case of infantile convulsions is associated with more or less pathologic change in the anterior horns and roots, is extremely interesting, and may help to explain the occurrence of central nerve degenerations and muscular atrophies in later life quite as well as scarlet fever explains the occurrence of Bright's disease, or rheumatism that of valvular lesions of the heart.

Professor Paltauf, whose thoroughly conservative though eminently scientific appreciation of advances in bacteriology and serotherapy is well known, has been giving some very interesting demonstrations of the specific therapeutic properties of various streptococcic serums. Animals have been inoculated in each ear with definite amounts of cultures of different forms of streptococci, and have then been injected with a streptococcic serum prepared by the gradual immunization of animals with ascending doses of one of the varieties of streptococcus. This never fails to put an end to the pathologic process produced by the affiliated streptococci, but has very little or no effect on the local inflammatory and general constitutional symptoms caused by the other form. To have any effect on the latter, the serum must be used in very large doses, and even then its action is not sure and radically curative.

Meantime, however, there are any number of reports of the success or failure of streptococcic serum, especially in puerperal cases. Often enough cases of puerperal sepsis are due to the presence of other bacteria than streptococci, but even when the latter are demonstrable it would seem to be all important to determine the specific variety which is at work. As was the case with diphtheria serum when injected for what was really a streptococcic infection in certain cases, the reputation of Marmorek's serum is liable to suffer when employed promiscuously, and for cases with which it has not the slightest biologic connection. Unfortunately, the varieties of streptococci are not so well differentiated by bacteriologists themselves as to make the use of a specific streptococcic serum easy for the practitioner. Meantime it will be employed in many cases, but always with other avail-

able therapeutic measures, and discouraging reports must not be given too much weight, as the solid foundation of its antitoxic specificity has been too clearly demonstrated experimentally for it not to prove ultimately of value.

The leprosy scare, which occurs periodically in different parts of the world, took place in the Dalmatian province of the Austrian Empire not long ago. A series of cases of a severe chronic skin disease occurred in a certain family, and finally the neighbors began to shun its members. Then it was noised about that they were lepers. The rumor came to the ears of the Austrian officials that leprosy was endemic in the province, and a medical man was sent to investigate. He reported that the rumor was utterly unfounded, but public opinion was not satisfied until Professor Neumann, who has devoted a good deal of study to leprosy in Norway, Sweden, and Iceland, went down to Dalmatia, brought one of the patients back with him, and demonstrated the case as one which Dühring, Thost and Unna have described as *ichthyosis palmaris et plantaris cornea*, or *keratoma palmare et plantare hereditarium*, an extremely chronic affection often producing very unsightly deformities of the hands and feet, the heredity of which may be traced through three or four generations. For it, Professor Neumann suggests the name "*keratosis hereditaria*."

I notice by the American medical journals and by the daily papers that a leprosy case has disturbed the sisterly relations of two of our important cities. This seems amusing here where the general teaching is that leprosy is almost absolutely, if not quite, non-contagious. Patients affected with it are treated in the ordinary wards for skin diseases, and pass around for general examinations during clinics. It is to be hoped that the publicity given to the present medical teaching on the subject as the result of the Leprosy Congress in Berlin in the fall will do something toward modifying the tendency of public opinion to make life more unbearable than it is for such unfortunate patients.

TRANSACTIONS OF FOREIGN SOCIETIES.

THE CONGRESS FOR INTERNAL MEDICINE, BERLIN.

THE Fifteenth Annual Congress of Internal Medicine was held at Berlin, June 9 to 12, 1897. This association, which has a membership of about 350, has upon its roll the names of the most celebrated physicians of Germany and Austria. It was at the first congress, held during April, 1882, that Koch announced his discovery of the bacillus of tuberculosis. Since that time many other important papers have been read at its sessions. The report of this year's proceedings which is given in these columns will be found to contain in a condensed form the most valuable of the communications presented.

BAUMLER, who read a paper on *chronic rheumatic arthritis*, spoke of the misuse of the term *rheumatism*, which is made to include cases of neuritis, tabes, periostitis, and gonorrheal arthritis. Properly speaking, "chronic rheumatism" is a chronic form of the acute. These are the cases in which repeated attacks of the acute affection which have not been treated for sufficient time, or

not with sufficient care, develop into a chronic form of the acute disease. Since the introduction of the salicylic treatment of acute rheumatism, these cases of chronic rheumatism have become much more rare. Excluding these from consideration, as well as the cases in which the joint affections are tuberculous, gonorrheal, or syphilitic, or due to some infectious disease, there remain the cases of polyarticular inflammation, with destruction of the joint surfaces, deposit of lime salts producing deformity, and often partial or complete disability. Hence the name "*arthritis deformans*."

The distressing course of this disease when untreated, leaving the patient at last bedridden, is familiar enough to every physician. Whether it is curable in its early stages is still a matter of dispute. Certainly no effort should be spared to accomplish this result if possible.

Trauma, in the widest significance of that term, is an important etiologic factor, as are dampness and cold in sleeping apartments, or in workrooms, though this has been denied by some authors. At any rate, the term "poor-man's gout" is inaccurate, as the disease is as common among the rich as the poor. Women are much oftener affected than men. This has been explained by attributing to the disease a reflex origin, the source of irritation being in the genitals. According to others the cause is an infectious agent, and the outbreak of the trouble in several joints lends credence to this view. Several investigators have announced the discovery of a specific bacillus, but thus far no one has succeeded in producing the disease by inoculation.

OTT said that the object of treatment is to get the patient as quickly as possible over each acute attack. As long as fever continues, absolute rest is to be observed and hot wet compresses applied to the affected joints. If the pain is very great, chloroform liniment or salves containing opium, or morphin injections, are to be employed. The benefit which formerly was sought by the use of the actual cautery may be more simply obtained by repeated applications of tincture of iodine. As internal remedies, aconite, colchicum, and guaiacol formerly were thought much of, and after them, salicylic acid; but valuable as this remedy is in the acute affection, its power is limited in the chronic, and antipyrin, acetanilid, phenacetin, phenocoll, and malakin are far better. If the swelling of a joint with serum is very great, puncture of the joint capsule, and escape of the serous fluid, will give relief.

When the acute symptoms have subsided, circulation around the joint should be stimulated, in order to further absorption of the exudate. Iodine and ichthyol are serviceable at this stage, and baths of the greatest variety, of water, fresh and salt, air, mud, sand, steam, etc., have all been praised, and justly. The essential principle in all of them is the heat. A valuable application of this is seen in the introduction of the affected joint into a chamber where the air is heated to 104° to 119° C. (220° to 246° F.). The limb sweats profusely, and the joint even after one treatment is much softer and more movable. Douches of hot water, or alternate hot and cold streams, massage, and passive and active motions, and electricity,

all are of use while acute symptoms are absent, and all must be suspended if acute symptoms return.

CHVOSTEK has found the blood and extravasations of rheumatic joints almost always sterile; and the idea of a specific micro-organism producing acute rheumatism must be given up. The characteristics of the disease are not sufficiently fixed; they are simply a swelling of the joints, and a short duration, and both symptoms are better explained by the action of toxins than by that of living bacteria.

A paper on *epilepsy* by UNVERRICHT was largely devoted to the nature of the disease. The reader inclined to the cortical, as opposed to the medullary theory. Epilepsy is only a name for a set of symptoms which will lose the significance of a genuine disease as soon as the true causes of the seizures, in different cases, are better understood. In alcoholic, lead, syphilitic, and uremic convulsions the epilepsy is recognized to be only a symptom; and as our knowledge extends, the applicability of the term "true epilepsy" will become less and less.

VIERORDT spoke of the use of iodine in diseases of the vessels, and especially in angina pectoris. During five years he has employed this drug in all cases of arteriosclerosis, with the exception of patients with bad heart lesions or marked albuminuria, with satisfactory results. From 15 to 45 grains of iodide of soda are given daily in divided doses in vichy or milk, for several months, or, with intervals of rest, for a much longer time. If necessary, digitalis or nitroglycerin may be given at the same time. The good results have been beyond question. Many of the patients had already obtained all the benefit possible from a careful dietetic and constitutional treatment before being placed in his care; but by a long-continued course of the iodids, they were relieved of severe angina, were able once more to go about, something which had for a long time been impossible without great pain, and in short were again able to resume their customary occupations.

The action of the iodide is not clearly understood. It probably brings to a standstill the sclerotic process in the vessels, which otherwise would be continually progressing. As a result of this, the increased blood pressure gradually sinks, and when this is accomplished, it suffices for the restoration of function for a long time. There is no proof that the iodide has any action tending to restore the vessels already affected.

EULENBURG discussed the *Three Theories of Exophthalmic Goiter*—hematogenous, neurogenous, and thyrogenous. The hematogenous theory, which was advanced by Basedow, rests on the fact that the disease is so much more frequent in women than men, and is so closely associated with disturbances of menstruation, beginning pregnancy, etc.

Advocates of the neurogenous theory sometimes look for the cause of the disease in the sympathetic nerves, sometimes in the vagus, and sometimes in the central nervous system. This theory finds support in the hereditary tendency of goiter, in its occurrence after traumatism, shock, etc., and in its association with epilepsy, hemi-

crania, and chorea, as well as with paralyses, astasia, abasia, diabetes and many other diseases.

The thyrogenous theory presupposes not merely an increased amount of secretion by the thyroid gland, but an altered secretion as well; and that the changed products of the gland circulating in the blood exert a toxic influence upon certain of the tissues, presumably those of the nervous system. In accordance with this theory, surgical treatment of exophthalmic goiter has come into being, and strumectomy, with possibly an after treatment with thyroid extract, is a well-recognized procedure. Truly, in most cases it is a method of treatment which can well be spared, as, unless there are marked local symptoms, treatment by medicine gives equally satisfactory or even better results.

BENEDIKT summed up the *Applicability of the Röntgen Rays to Internal Medicine*. By their use we have first learned the exact range of the heart's activity—something which has been greatly overestimated—its comparative freedom from the diaphragm and its suspension from the great vessels. Moreover, the size of the heart and the exact location of its apex can now definitely be determined, even though covered by the lung, and in case of hypertrophy the exact part involved can be plainly seen. We may see the organ take the form of sucking, and can watch its rotation; if there is dilatation it may be followed from day to day, in order to observe the effect upon it of the remedies employed.

The action of the respiratory muscles, in health and in abnormal conditions, and the presence in the lungs or pleuræ of consolidations are revealed by the variations in the translucence of the chest, by alterations in the position and action of the heart, etc. The diagnosis of new growths is made easier and more certain. The rays are a help in the early diagnosis of tuberculosis of the vertebræ. In abdominal troubles they have not proved so serviceable; though certain stones, notably phosphates and oxalates, have been located by their use. For the exact localization of foreign bodies, in the esophagus and elsewhere, the rays are naturally of great assistance.

LEVY-DORN called attention to the fact that by the help of the rays the diagnosis of aneurism of the aorta can be made at a time when no other method of diagnosis will reveal its presence. The chance that treatment will result in a cure, is therefore increased.

BEECHER has found that the bones in an extremity show with much greater clearness, if the limb first be rendered bloodless with an Esmarch bandage before exposure to the rays.

In a paper, entitled the *Limits of Modern Drugs*, LIEBRICH made an attack upon the advocates of serum treatment. The bacteria, he said, are often not the real cause of disease, but they direct themselves against the body, the power of resistance of which is already lowered. How often one sees tuberculosis of a single organ, without resulting phthisis, just as tubercle bacilli exist in the bronchi of healthy men, and do not cause the disease. Before the bacillus can enter the lung, this must first be diseased; and therefore it is hopeless to try to heal phthisis by destroying the bacilli. If this were done, the disease would

remain and the lung would simply become the harbor for other parasites. We must look to "cellular excitants" for a real cure, and these exist, not merely in fresh air and diet, but also in the pharmacopœia. A most valuable remedy of this class is cantharidin.

The discussion of this paper led to a presentation of the already familiar arguments for and against the use of antitoxin in diphtheria. Speakers on each side admitted that the decision of this much-disputed point must finally rest with practising physicians, and not with scientific experimenters.

RUMPF has investigated the *Disposition of the Lime Salts in Heart Disease*, and finds, (1) that if lime salts are given freely, a considerable portion remains in the body; (2) that in patients with calcification of the vessels, there also may be a diminution of the excretion of lime salts as compared with their introduction; (3) that the amount of lime in the blood varies both in health and disease. The writer, therefore, concludes that in certain diseases it may be advantageous to reduce the ingestion of lime salts. From further experiments with different kinds of food, he has been led to believe that a mixed diet is better for cardiac cases than a diet limited to flesh and fat.

On the Significance of Stimulation for Pathology and Therapy in the Light of the Theory of the Neuron, was the title of a paper by GOLDSCHNEIDER. The theory of the neuron rests upon the supposition that the nervous system is not a continuous path for transmitted influences, like a system of telegraph wires, but that every cell with its axis cylinder and its dendritic processes is an independent entity of a functional and nutritive nature. The neurons are not united—they only touch mechanically. If excitement rises high enough in one neuron, it is communicated to the next. Every neuron has its particular swell of excitability, that is, a certain pitch of excitement which it must reach in order to become active. This property of a neuron is for it an inherited and lasting one. All the neurons of the central nervous system are in touch; therefore, a sufficiently powerful irritation may spread over the whole tract. The stimulus travels along the line of least resistance, wherever the excitability has the swell of lowest value.

The excitability of the neurons can be so changed by irritation that the slightest stimulus will increase it, while strong ones will reduce it. This theory clears up many riddles in nervous diseases. It brings us also to new therapeutic resources. Thus, we may reduce an overexcitability of one part of the nervous system by rendering more sensitive another portion. In unilateral loss of sensibility it is evident that electricity to the unaffected side may restore the balance between the two sides, and this is borne out by the results of treatment. Hydrotherapy and massage produce good by calming the too excited neurons. Suggestion must be looked upon as a change in the degree of excitability of the neurons, either an increase or a decrease according to circumstances.

BEIN has been unable to produce mumps from cultures of a streptococcus found in that disease, in the duct of Steno, in parotid abscesses, and occasionally in the blood.

This streptococcus in appearance resembles the gonococcus and meningococcus, and is considered by Michaelis and others to be the specific germ of mumps.

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF OBSTETRICI- ANS AND GYNECOLOGISTS.

*Tenth Annual Meeting, Held at Niagara Falls, N. Y.,
August 17, 18, 19 and 20, 1897.*

FIRST DAY—AUGUST 17TH.

THE meeting was called to order at 9.30 A. M. by the President, DR. JAMES F. W. ROSS of Toronto. After certain preliminary business had been despatched and new members elected to membership, Dr. W. R. Campbell of Niagara Falls was introduced. He extended a welcome on the part of the Niagara Falls Academy of Medicine to the visitors. A cordial invitation was given to all to join in the entertainments which had been organized by that body during the session of the Association.

The first paper presented was by DR. WILLIAM WARREN POTTER of Buffalo on the subject of

PUERPERAL ECLAMPSIA, WITH SPECIAL REFERENCE TO TREATMENT.

The speaker said that at the Geneva Congress last year, M. Charpentier, a distinguished honorary Fellow of the Association and a recognized authority of high standing, gave expression to certain views regarding the treatment of puerperal eclampsia, especially as to the applicability of the induction of premature labor for its relief, which were so at variance to those which the speaker had been accustomed to harbor, and the soundness of which he had so frequently tested that he held no doubts concerning them. He had been greatly surprised that the views then brought forward had remained unchallenged. He thought that in the interest of professional progress and science these opinions of Charpentier should be opposed. His own observation and experience extended over a period of many years, and in the application of the principles advocated a measure of success had been obtained which did not present itself under a contrary method previously pursued.

The speaker said that it is a matter of great regret that we are still in doubt as to the pathogenesis of puerperal eclampsia. We are even forced to deny that it is a pathologic entity, and to affirm that it is but a group of symptoms which has been named "eclampsia" for the sake of convenience, or for the want of a better term. We are prepared to assert, as a result of progress already made, that it is not of hysteric, epileptic, or apoplectic origin; *i.e.*, that it is not produced in the human economy except in the pregnant or puerperal state. We might go further, and if possible agree that the convulsions are reflexes excited by cerebrospinal or medullary irritation of toxemic origin—a toxemia peculiar to pregnancy that has no parallel except during gestation.

After discussing in detail the probable causes of puerperal eclampsia, the speaker summed up as follows:

1. Though the pathogenesis is unsettled, it belongs solely to the pregnant, or puerperal state. It is not apoplectic, epileptic, or hysteric in character.

2. It depends upon toxemia due to over-production of toxins and under-elimination by the emunctories.

3. These toxins probably have their origin in the ingesta, in intestinal putrefaction, in fetal metabolism—one or all, and there is coexisting sluggishness and impairment or suspension of elimination.

4. When the prodromes of eclampsia appear the kidney should be interrogated as to its functions, and all symptoms carefully watched.

5. Treatment is (a) preventive, and (b) curative. Preventive treatment is medicinal and hygienic; curative treatment is medicinal and obstetric.

6. Milk diet and distilled water should be given during the pre-eclamptic state in order to dilute the poison, hasten its elimination and nourish the patient.

7. Blood-letting should be employed only in cases of plethora or cyanosis. It is liable to cause anemia if persisted in or repeated, whereas red blood-corpuscles must be conserved, not wasted. Glonoin diminishes vasomotor spasm, hence may be given freely in appropriate cases. Veratrum viride is a cardiac depressant and a dangerous remedy if pushed to an extent that will control the convulsions.

8. Eclampsia is the expression of a further maternal intolerance of the fetus; hence, as a primal measure, the uterus should be speedily emptied of its contents.

9. Medicinal treatment alone is a delusion, and when relied upon exclusively is fraught with danger, both to mother and fetus, whereas, in the prompt induction of labor is found a rational application of science to a desperate condition.

10. Finally, the induction of premature labor presents, in the present state of our knowledge, the only basis of expectation for a diminished mortality in a toxemic disease possessing a high death-rate.

In the discussion following the reading of this paper, DR. JOHN M. DUFF of Pittsburg said, in regard to the bringing about of premature labor in cases of eclampsia in which albuminuria is present, conscientious practitioners will not hesitate, although in exceptional cases careful attention to medicinal treatment will cause the albumin to disappear, and the patient will go on to normal labor. As a diuretic, he had obtained the best results from the use of milk as hot as could be taken by the patient with a spoon.

DR. H. W. LONGYEAR of Detroit said that the subject is one of extreme importance, and that he had been surprised that the essayist had not mentioned the necessity of inducing premature labor before the occurrence of eclamptic symptoms. Such treatment appeared analogous to snuffing out the light of a fuse after an explosion had occurred. Premature labor should be brought about, in his opinion, in every instance in which a daily examination of the urine shows a constantly increasing amount of albumin, with prodromal symptoms of toxemia. He had induced premature labor twice during the past year

under these circumstances, the patient in one instance being seven and one-half months' pregnant, and in the other, eight months'. He does not advocate this course merely because albumin is present in the urine, but because of this and the fact that the amount of urea eliminated is constantly decreasing. He considers the treatment by means of hot milk very valuable.

DR. WALTER B. CHASE of Brooklyn said that decrease in the daily amount of urea is a most valuable indication of the probable occurrence of toxemia in these cases. Unfortunately, many eclamptic patients are seen for the first time only when in convulsions, and then the production of premature labor is the single measure that can be relied upon. There are certain cases, however, in which the urine clears after a few days, and in these it is unjustifiable to end the period of gestation prematurely. For his own part, he considers that the best method of stopping the convulsions, especially when arterial pressure is high, is by the administration of veratrum viride. He believes its use to be unaccompanied by danger.

DR. W. H. WENNING of Cincinnati questioned the advisability of producing premature labor under all circumstances in which toxemic symptoms developed. In many instances if the os is rigid and not dilated there is danger of bringing on convulsions if the obstetrician attempts to dilate. He thinks the psychologic element is an important one. He related the history of one patient who presented no symptoms whatever of toxemic infection, there being no albuminuria or edema present, but who died shortly after the birth of her child. Another patient feared that her child might be born before the expiration of nine months from the date of her marriage, and was in a state of constant nervousness on this account. When labor finally occurred forceps had to be employed. The patient soon developed a condition of marked apathy and would pay no attention to her child. On six different occasions she had a convulsive seizure immediately after the physician's visit and just as he was leaving the house, but each immediately ceased upon his being recalled. The patient finally died, there having been no true symptoms whatever of toxemia.

DR. STOVER of Amsterdam, N. Y., said that the essential point in these cases is how surely and certainly, and how soon, can the condition of puerperal eclampsia be diagnosticated? He spoke in strong terms of the importance of a daily analysis of the urine. If called to see a patient late in the progress of the case the urinalysis may present entirely different features from that in the beginning. He knew of three cases occurring during the past three months in which the attending physician had waited for more marked symptoms to occur after albuminuria had developed, and each of the patients died. He thought the method of Etheridge of Chicago, probably a modification of that of Paget, of estimating the amount of urea, a very valuable one. The speaker referred to a case which came under his own observation in which but 500 grains of urea was excreted daily when there should have been 1300, the patient developing eclampsia.

The PRESIDENT said that he has found that the occurrence in females, during early life of exanthematous fevers,

has a marked influence upon subsequent renal insufficiency. In more than one instance he has been able to trace this insufficiency to an attack of scarlet fever, or diphtheria, occurring during childbirth. The question of puerperal eclampsia is no nearer to settlement than it was fifty years ago. The pathology of the condition is shrouded in darkness, and a step forward would be for the larger medical associations to institute a regular series of investigations with the hope of determining its cause.

In many of the worst cases premonitory symptoms are not present at all. In his opinion it is unwise to use haste in emptying the uterus, when this has been determined upon, as there is great danger of lacerating the parts. The question of the advisability of inducing premature labor in the case of a patient who, in a former gestation, had eclamptic attacks, but in whom at the time of the subsequent pregnancy no symptoms of toxemia were present, is an important one. He has completed the period of gestation in a number of cases of this sort, and thinks such action entirely justifiable, although it is not to be denied that a woman may go through a number of pregnancies normally before a second series of eclamptic attacks occur.

DR. LONGYEAR asked if the speaker advised the induction of premature labor under these circumstances if there were no symptoms whatever of renal insufficiency.

THE PRESIDENT replied in the affirmative and reported the history of a case in which he had practised it.

DR. RUFUS B. HALL of Cincinnati said that such a doctrine is an extremely dangerous one, and that he opposed it strongly. Merely because a woman at some previous time had had eclampsia was not sufficient reason for terminating gestation prematurely when no symptoms of toxemia were present.

In closing the discussion, DR. POTTER said the occurrence of albuminuria is a danger signal, but that decrease in the daily amount of urea excreted by a pregnant patient is still more valuable as a diagnostic sign. The question of the previous occurrence of exanthemata, referred to by Dr. Ross, was of extreme importance. The violent production of premature labor is never justifiable. If eclamptic attacks occur some time previous to labor, the physician may take time in emptying the uterus, but in the *intrapartum* variety, the cervix should be carefully dilated by means of a steel dilator and the hand, and, if necessary, forceps applied and the fetus delivered. He has accomplished this within three hours, when the cervix was rigid, without lacerating the tissues, and has saved the life of both mother and child.

THE PRESIDENT asked Dr. Hall if another physician came to him and said that he was afraid to have his wife go to term on account of having had eclampsia during a previous pregnancy, if he would advise terminating the course of gestation at once?

DR. HALL asked if the President meant for him to give such advice if no kidney lesion was then manifest, to which the President replied that the only symptom of kidney insufficiency was the presence of albumin in the urine. Dr. Hall replied that he would never give such advice under the circumstances, and thought such a course

unjustifiable. Symptoms of eclampsia must be present before he would advise interference, no matter what the previous history of the patient might be.

The next paper, entitled

PUERPERAL DIPHTHERIA,

was read by DR. H. W. LONGYEAR of Detroit. The essayist said that the Klebs-Loeffler bacillus is a potent factor in the etiology of puerperal infection, and cited six cases in proof of the statement. The diphtheritic character of each case was determined not only by clinical evidence, but by bacteriologic examination made by the bacteriologist of the Detroit Board of Health. Five of the patients recovered and one died, the one death being the only case in which antidiphtheritic serum was not used. He recommends bacteriologic examination in all cases of puerperal infection, condemns curetting in all cases where a membranous exudate is present, and the use of the antidiphtheritic serum, the intra-uterine application of a strong solution of iodine and carbolic acid at the beginning of treatment, drainage of the uterus by a tube, intra-uterine irrigation with antiseptic solutions, bi-hourly vaginal injections of hydrogen peroxid, and the usual supporting treatment with quinin and whisky. In mixed cases of Klebs-Loeffler and streptococcal infection he recommends, first, the use of the antidiphtheritic serum, and then, after twenty-four or forty-eight hours, the use of the anti-streptococcal serum.

He believes that the true character of this form of infection has not heretofore been recognized, but that it will be found to be more or less prevalent in all localities in which diphtheria exists, if sufficiently careful examinations are made. The physician and midwife are warned to use especial care in such localities, as the *post-partum* parturient canal furnishes the most favorable soil for the growth of the Klebs-Loeffler bacillus. In one of the cases reported, patches of pseudomembrane were present on the vaginal walls when none was present in the throat, and a bacteriologic examination of the membrane demonstrated diphtheria bacilli in great numbers. The speaker deplored the use of the sharp curette in cases in which toxic symptoms developed, as by its use new channels of infection are opened. The dull curette may be used with advantage in the hands of a skilled operator. If diphtheria prevails in the neighborhood of the patient it is wise not to wait until a bacteriologic examination reveals the exact nature of the infection, but to employ antidiphtheritic serum at once, as no harm will have been done if the condition proves to be due to invasion by streptococci. He is in favor, also, of washing out the vagina every two hours with two drams of full-strength hydrogen peroxid.

(To be continued.)

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting, Held June 16, 1897.

THE President, CHARLES L. DANA, M.D., in the Chair.

DR. H. L. TAYLOR reported a case of transverse fracture of the femur above the knee-joint and exhibited a

skiagraph showing the lesion. The patient, a girl, eleven years of age, came to the Hospital for Ruptured and Crippled with a history of having fallen in such a way that the knee was doubled under her. She was helpless after the accident, and was confined in her bed for two weeks. When seen at the hospital, examination showed some swelling just above the joint, but there was very little tenderness. The angle of greatest extension was 155° , but flexion was normal in extent and free from spasm; from this fact it was evident that the knee-joint was unaffected. A ridge across the bone, not far above the joint, due to the forward projection of the upper fragment, could be felt distinctly and the diagnosis of diastasis of the lower epiphysis of the femur was made. A skiagraph of the injured limb showed that the injury was a simple transverse fracture of the lower end of the femur, considerably above the epiphyseal line, with impaction posteriorly. The case was reported to illustrate the value of the skiagraph in diagnosis.

DR. S. H. DESSAU remarked that in a recent discussion Professor Keen had expressed the opinion that not much reliance is to be placed on skiagraphs, especially in fractures of the radius, because they may not show the fracture well even when the surgical signs are very plain.

DR. E. S. PECK said he did not see any ground for such a positive statement on the part of Dr. Keen. Personally, the speaker had seen several very admirable pictures of fractures at the elbow-joint in which the small fractures of the condyles were very beautifully shown, and he considered skiagraphs of immense importance in diagnosis.

DR. J. H. FRUITNIGHT asked Dr. Taylor if separation at the epiphyseal line was of frequent occurrence.

DR. TAYLOR replied that it was extremely rare and that he had been interested to investigate the case reported on that account.

THE PRESIDENT said that the case brought to his mind one which was interesting in connection with skiagraphy. A woman about thirty years of age had come to his clinic suffering from a progressive atrophy of the hand and forearm. She was a dressmaker and had been forced to give up work on account of the disability. When she was ten or eleven years of age she had had a fall and sustained an injury of the elbow, but no fracture. She apparently got over this, and was perfectly well until four or five years before she presented herself at the clinic. At that time she began to notice a numbness of the little and ring fingers, and, later on, pain developed. When the patient was first seen the hand and forearm presented the appearance of a progressive muscular atrophy, the intrinsic muscles and ulnar distributions being affected. There was some anesthesia over the distribution of the nerve, however, and this, together with the absence of fibrillary contraction, made the speaker exclude progressive atrophy. As there was a history of an old injury, she was sent to Dr. B. F. Curtis, to see if he could find anything that would justify an operation. He reported that he was unable to discover anything which would account for the trouble, and advised that a skiagraph be made of the arm. Two pictures were taken from different points of view,

and these showed a distinct exostosis on the internal condyle. Dr. Curtis then cut down upon the ulnar nerve, and found that it had become pressed upon where it passed over the condyle, and that the constant irritation thus produced had caused a perineuritis and a fusiform enlargement of the nerve. He pulled the nerve out of its natural position back of the condyle and put it in front, so that it would no longer be irritated when the arm was flexed. Since the operation the patient had steadily improved, the pain and numbness have disappeared, and the woman has gone back to her work.

DR. TAYLOR said that the flexion of the leg in his case was due to the faulty position in which union had taken place before he saw the patient, and which could not be overcome without operation. He would advise that later the bone be divided by the chisel and the deformity corrected. In regard to Dr. Dessau's remark, the speaker had only that day seen a skiagraph of a forearm, showing the line of fracture with great distinctness.

DR. A. R. ROBINSON reported an unusual case of chicken-pox in an adult. The patient, a man of thirty, was first seen on Sunday, at which time only a few spots were visible. On Wednesday he was covered from head to foot with the eruption. The speaker asked if any of those present had ever seen a similar case.

DR. J. BLAKE WHITE said he had once seen a case of chicken-pox in an adult, and that the eruption strongly resembled that of smallpox. The umbilication was very marked.

DR. S. N. LEO remarked that he had seen cases of varioloid which resembled chicken-pox. He remembered one case in particular in which he had made a diagnosis of varioloid. The patient was a woman who kept a boarding-house. The case was reported to the Board of Health, and an inspector was sent to the house, who pronounced the disease chicken-pox. The patient placed the speaker in a very unpleasant position by threatening to sue him for making a wrong diagnosis, by reason of which her boarders had left her, thus causing her financial loss. Within a month he learned that two of the boarders, who had gone to different parts of the country upon leaving the house, had been attacked with a very severe form of varioloid. The speaker thought this case worthy of being placed upon record.

DR. FRUITNIGHT said that in children it was quite common to see chicken-pox which resembled smallpox. One is not apt to suspect chicken-pox in an adult, but the fact that it does occur at times should put us on our guard against making a diagnosis of smallpox too hastily.

DR. ROBINSON thought there would be no special difficulty in making a differential diagnosis if there were a sufficient number of lesions present. In the beginning of smallpox, one never sees vesicles such as are found in chicken-pox.

DR. E. S. PECK reported a case of mastoid disease in a child two years and two months old. The child had had a discharge from the right ear for eight weeks, and had been under the care of a homeopathic physician. During all this time, and in spite of the fact that at one time the child was in coma for several hours, neither

meningitis nor mastoid disease was suspected, and the child's temperature had not been taken for six weeks, although at that time it was 102° F. When the speaker first saw the child, the entire right side of the head, from the vertex to the jaw, was occupied by a swelling. The mastoid was immediately trephined, and from twenty to twenty-five drops of pus evacuated.

DR. R. A. MURRAY thought that patients with ear trouble should be warned of the risk they run in allowing it to go untreated, and referred to a case of a young man whom he knew to be suffering from ear disease, and who was seized with a convulsion and died of meningitis as a result of the former disease.

DR. PECK agreed with the preceding speaker and said he had a patient who for years had had ear trouble. It was a matter of astonishment to him that the mastoid had not become involved, for a probe could be passed up into the cells. The ear now gives but little trouble, probably because the patient has taken good care of herself in the way of avoiding cold and draughts.

DR. R. H. GREENE then read a paper, entitled,

SYPHILIS OF THE KIDNEY.

The paper was based upon the recorded results of the pathologic changes observed in the kidney after death in individuals suffering from syphilis at the time of death, or in whom syphilis was given as the cause of death. Few morbid changes are found *post-mortem* in the kidney which are distinctly indicative of syphilis, with the exception of syphilitic gummata, which are very rare. Syphilis, however, may be said to be directly or indirectly the cause of (1) parenchymatous nephritis; (2) interstitial nephritis; (3) gummatous nephritis, and (4) amyloid nephritis. One or more of these conditions may exist simultaneously, or follow each other, in an individual.

Parenchymatous nephritis occurs in syphilis as it does in other infectious diseases, and the symptoms do not differ. It is most apt to develop during the first few months while syphilitic lesions are present upon the skin or mucous membranes. The prognosis is favorable.

Interstitial nephritis may occur shortly after infection or late in the disease. Interstitial lesions of the kidney have been found in infants suffering from congenital syphilis. It usually affects both kidneys, and is very apt to occur in those affected with syphilis late in life.

Although gumma are rarely found in the kidney after death, there is reason to think that gummatous nephritis occurs more frequently than is generally supposed. Lobulated kidneys are sometimes found in which the lobulation is due to cicatricial bands which have formed after gummata have been absorbed. In such cases a differential diagnosis may be made from congenital lobulated kidney by the fact that in the former the capsule will be found adherent and dipping down into the cicatricial tissue. Gummatous nephritis, as a rule, attacks one kidney only, and is necessarily associated with some interstitial nephritis. Gummata of the kidney, like those in other parts of the body, are amenable to treatment, and the prognosis is good.

Amyloid nephritis is the most common form of renal

disease due to syphilis, and is often found associated with fatty degeneration. The diagnosis may be made by the presence in the urine of waxy casts and by the clinical symptoms.

The treatment of syphilis of the kidney should consist in the administration of the iodids and mercury. The latter should be cautiously prescribed, as in these cases salivation is especially liable to occur on account of the eliminative power of the kidneys being interfered with. The general health of the patient should also be looked after.

The following conclusions were arrived at:

1. That in a small proportion of cases, syphilis attacks, directly or indirectly, the kidneys, causing inflammation of the parenchyma, interstitial tissue, or giving rise to gumma and amyloid degeneration.

2. That any one of these conditions is seldom present by itself, but is usually associated with one or more of the others.

3. The syphilis shows in the various lesions of the kidney caused by it, except the interstitial variety, and even here, occasionally, a proneness to attack one kidney only.

4. It occasionally, by attacking the kidney, may give rise to symptoms which simulate malignant disease or renal calculi.

DISCUSSION.

DR. ROBINSON said he would not expect to find waxy casts in the urine as an indication of amyloid disease of the kidney. He also took exception to the term "syphilitic disease" as applied to the condition of any organ or tissue when there are no longer any syphilitic germs in the system. Syphilis, being a specific disease caused by an organism, can no longer exist when these organisms have left the body, therefore, any changes which occur subsequently should not be called "syphilitic." The term, "irritation lesion," he thought, was a better one to express the affections coming on after the active process had ceased. A sort of dyscrasia exists—there is an increase of the plasma cells and of the connective-tissue corpuscles—a pin scratch will not heal and white patches appear in the throat and mouth on the slightest provocation.

DR. WHITE said that little has been written about syphilis of the kidney *per se* because lesions are seldom found there. This is probably due to the fact that the kidney is an eliminative organ, constantly engaged in throwing off poisons and not absorbing them readily, and also because other organs are so much more prominently involved that the renal lesions are lost sight of. He agreed with the preceding speaker in regard to the application of the term "syphilitic disease" to lesions which follow syphilis. According to Dr. Otis, these should be called *sequelæ*.

DR. C. A. LEALE was of the opinion that the disease was not uncommon and that cases are often overlooked. He narrated the history of a woman, twenty-nine years of age, who had come to him recently with marked symptoms of kidney disease. She had been married two years and was three months pregnant, and had come to him to

have an abortion performed because her physician had told her she would die if allowed to go to full term. Upon examination she was found to be covered with a syphilitic eruption and showed the usual manifestations of the disease. The speaker considered the kidney trouble directly due to the action of the syphilitic poison and the patient was now under treatment for this disease. He also mentioned another case in which labor was brought on at the eighth month on account of the kidney symptoms. The baby lived and developed syphilis within two weeks. At the age of twelve, the child suddenly became blind, remained so for some time, and, finally, regained its sight under antisyphilitic treatment.

DR. FRANK GRAUER did not believe the disease was of common occurrence. He had seen only three cases of so-called syphilitic gumma of the kidney in the thousand autopsies which he had witnessed. One was that of a young man who had entered Bellevue Hospital with a history of meningitis. A diffuse meningitis with gumma was found, and also a gummatous growth in the kidney. In regard to waxy degeneration being generally confined to one kidney, the speaker said the disease was bilateral in all the cases he had ever seen and was caused usually by tuberculosis or syphilis.

DR. R. A. MURRAY said that syphilis of the kidney was undoubtedly one of the causes of hematuria, and mentioned two cases in which the latter was relieved by the use of inunctions.

DR. FRUITNIGHT referred to a case of hematuria occurring in a young man who had syphilis. Bacteriologic examination of the urine showed that he had tuberculosis.

DR. GREENE, in closing, said he agreed perfectly with all Dr. Robinson had said in regard to the term "syphilitic disease," in fact, he stated in the beginning of his paper that it dealt with diseases of the kidney of which syphilis was the direct or indirect cause. He, however, thought the dyscrasia which follows syphilis could best be described by the term "fibrosis." Gumma is generally considered as syphilis in its active state, although it is a disputed point whether or not the secretion of gumma will give rise to the active disease. It is, in all probability, an intermediate state.

In regard to syphilis showing itself by amyloid changes in one kidney only, the speaker said his views were based upon autopsic observations made on persons who had died of syphilis. Most of these observations had been made by the Germans, notably E. Wagner, who mentioned a number of cases of syphilis of the kidney in which only one of the organs was affected. The speaker expressed the opinion that the same changes might be found as a result of long-continued suppuration or of tuberculosis.

CORRESPONDENCE.

OXYTUBERCULIN.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: Replying to a letter addressed to you by S. Bookman, Ph.D., M.A., which was published in THE MEDICAL NEWS of July 31st, I very much regret the per-

sonally aggressive manner in which it was written. Such a spirit should never be observed in scientific work, and I shall therefore act as if it did not exist.

With regard to the subject matter itself, I will state that in the paper read before the California State Medical Society I avoided all theoretic discussion as far as I could, and limited myself to a statement of facts as observed by me. The lecture was more historic than argumentative. I referred to the observation of surgeons in cases of laparotomy for tuberculous peritonitis, because it was these often recorded results that led to a theory. Following this theory, a line of investigation was carried out and the facts observed and recorded. It is provisionally of little importance whether the theory which led to the plan of treatment be correct or not; that which is of the utmost significance, however, is: Are the facts correct or has there been an error in the methods? As I stated, "I simply desire to present to you the evidence that I have thus far collected, and to ask you whether you consider it sufficient to warrant further investigation by me and by yourselves in the same direction. The work is not presented as a finished task."

The missing evidence has been far more forcibly and clearly referred to in the editorial of THE NEWS of July 10th than in the letter of Dr. Bookman. The investigation is by no means so simple a matter as he seems to think. A complete investigation would have to be conducted in three directions: (1) Bacteriologic; (2) experimental; (3) clinical. I believe I have established my thesis absolutely with regard to the specifically bactericidal action of oxytuberculin. The experiments have been so frequently repeated and have been watched so carefully by so many of my colleagues that there can be no possibility of error. In the clinical department I have been as careful and as skeptical as possible. My patients have been observed by other physicians wherever it has been possible before, during, and after treatment. Their mode of life has not been changed, they have not received any other medicine except a mixture of codein and syrup of wild cherry now and then when the cough has been very harassing. A few, who had contracted malaria with enlarged spleen, received quinin. The results have come so rapidly in early cases that it was absolutely impossible to explain them in any other manner than by ascribing a specific effect to the oxytuberculin. In the laryngeal cases the disappearance of the trouble has been watched by laryngeal specialists. I have left the second method of investigation, the experimental, to others who may be better equipped for the purpose. There are two lines that would have to be followed in such research:

1. The effect of the oxytuberculin upon the toxin.
2. The effect upon the pathologic condition.

I would suggest that it first be determined, whether or not the oxytuberculin will inhibit the action of tuberculin; and, second, whether it will prevent the development of the injected germ in the guinea-pig, or bring about its absorption after it has developed.

More space than can be allowed me in this response would be necessary to cover the whole ground, I simply desire to state that I have placed my evidence, bacterio-

logic and clinical, before the profession and desire that it be investigated skeptically, but honestly. Should my observations be found to be incorrect, no one would acknowledge the error more readily than I, for what we desire is only the truth.

J. O. HIRSCHFELDER, M.D.

SAN FRANCISCO, CAL., August 3, 1897.

REPLY TO DR. UPSHUR.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In THE MEDICAL NEWS of June 24th, I reproduced a portion of your abstract of Dr. Upshur's paper and criticised his invidious comparison of the reports of honorable physicians with the "testimonials" of the dupes and touts of charlatans so freely given to the shameless venders of "cancer cures" and "kidney cures," *sui generis*. I thought the Doctor would see at once that his language was grossly insulting, not only to every physician who had reported the results he had obtained with the "Woodbridge method" of treating typhoid fever, but to every member of the medical profession whose *esprit de corps* makes the word of a medical man on a medical topic infinitely more valuable than that of any layman, and under no circumstances to be mentioned in connection with, compared with, or even contrasted to "the testimonials" of the medicaster and his *gobemouche*, and that he might see the gravity of his offense in its true light, I stated that there had been reported 7857 cases of typhoid fever treated by the method under consideration, with 150 deaths—a death-rate of 1.91 per cent. Instead of accepting my hint and, in the chivalrous spirit for which the gentlemen of his State are noted, promptly apologizing, Dr. Upshur further transgresses by attempting to excuse his utterly unjustifiable language by referring readers to my paper in the *Journal of the American Medical Association* of July 10th, in which are published a few extracts from reports received since I read my paper before the Ohio State Medical Society in May last.

The Doctor says: "I have no personal abuse for Dr. Woodbridge"; but why should others suffer for my offense? I am the guilty one. Why should he let me escape, and heap such infamy on the brave and noble physicians who so courageously volunteered in defense of a stranger in the hour of adversity? But, Mr. Editor, there have been many amusing incidents connected with this old controversy, in which this new knight has just broken his lance; but his letter will challenge comparison with the best of them all. I have been accused of having *said* and *done* many things which were foreign to my notions and in conflict with my dearest theories. Debators and dissertationists have wasted words and ink in frantic efforts to prove that statements which I have *never* made should never have been uttered, and that claims which I have *never* advanced should never have been made. But the palm of victory belongs to the writer who "begs space for correction" of my "inaccurate statements" in the current number (July 31st) of THE MEDICAL NEWS, who says: "I protest that I shall not be misrepresented as having 'sanctioned' the use of phenacetin," etc.; who says, "Why does he take part of a sentence and make

me 'sanction',' etc., and who then launches out in an effort to prove that he does not use or advise the use of phenacetin in the treatment of typhoid fever.

Now I protest that in the article which he is correcting I was *not* "inaccurate"; I did *not* misrepresent him; I did *not* make him "sanction the use of a remedy" which he had not himself "sanctioned." If the words "such preparations as phenacetin, etc., may be used in small doses," does not *sanction* the use of phenacetin, what were they put in the paper for? In this, Dr. Upshur seems to be quibbling in order to distract attention from the insult he has offered the medical profession and for which he will, if he be a gentleman, avail himself of the earliest possible opportunity to apologize.

The closing sentence of Dr. Upshur's letter is a *non sequitur*. The treatment which will give, in the safest and easiest way, the largest percentage of recoveries, with the smallest percentage of deaths, as well as the shortest duration of the mildest illness and the quickest restoration to the most perfect health, will need no other commendation.

That all of these results are best attained in the disease indicated by the method of treatment under consideration, is amply proven by the commendations of the physicians who have used it and by the following statistics: Number of cases of typhoid treated to date, 8639; number of deaths, 161; death-rate, 1.85 per cent.; average duration of illness in 5511 cases, 12.9 days.

JOHN ELIOT WOODBRIDGE.

CLEVELAND, OHIO, August 10, 1897.

REVIEWS.

TRANSACTIONS OF THE EIGHTEENTH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION. Held in the City of Pittsburg, Pa., May 14, 15, and 16, 1896. New York: D. Appleton & Company, 1897.

The extensive program of this meeting, comprising as it does thirty-four papers, not including the theses of the candidates for membership, proves, in the words of the President's address, that it is quite possible to have for a scientific organization a congress of the first class in a city of the second class.

Among the papers of general interest, that of Dr. Carl Leiter on "Prophylaxis of Nasal Catarrh" is worthy of notice as a valuable contribution to a subject of great practical importance. As indicated in his remarks, cleanliness, not only of the whole body, but of the nasal cavities in particular, whether a cold in the head is present or not, is the primal and most important prophylactic measure which can and should be instituted to prevent recurrence of acute coryza; to prevent, finally, systemic infection by ingestion of putrefactive products. As important as this nasal cleansing, is the proper feeding and clothing of children, so that overheating of the general system may be avoided, and the skin, especially around the neck and arms, should be so hardened by cold-water applications, in the form of sponging morn-

ing and night, that moderate exposure will not readily give rise to acute coryza. The suggestions deserve to be followed, even if we may be inclined to consider the author's judgment on the condition of the American child as too severe. There will be some dissent from the generalization that the children are, as a rule, too much clothed, too much confined indoors, and overfed with heat-producing food, so that when they leave the nursery they are mere hot-house plants, and that it takes a long course of out-door sports with boys to inure them to exposure, with a number of the after serious effects of exposure, upon the respiratory organs in particular, to make them strong and healthy.

The relation of acute diseases of the nose and throat to disorders of digestion is well treated by Dr. Moreau R. Brown, while Dr. T. R. French supplements this paper with a consideration of chronic conditions of this sort and their results. The sequelæ of syphilis, nasal, pharyngeal, and laryngeal, and their treatment, are discussed respectively by Drs. C. H. Knight, J. E. H. Nichols, and W. K. Simpson.

THE DISEASES OF THE STOMACH. BY DR. C. A. EWALD, Extraordinary Professor of Medicine at the University of Berlin. Translated and edited by MORRIS MANGES, A.M., M.D., Assistant Visiting Physician to Mount Sinai Hospital; Lecturer on General Medicine at the New York Polyclinic. Second revised and enlarged edition. New York: D. Appleton & Co., 1897.

THE recent great advances in the knowledge of diseases of the alimentary tract, particularly of the stomach, have necessitated a new English edition of Ewald's book. This is rendered more readable by the abandonment of the style of the first edition, in which the chapters were in the form of lectures.

We note particularly the greater minuteness in the details of the examination of stomach contents; the recommendation of Uffelmann's test for lactic acid and that of Töpfer for free hydrochloric acid, and the doubt expressed as to the merit of the biuret reaction. Meltzer's experiments showing the non-contraction of the fundus of the stomach to the faradic current are thoroughly discussed, and the conclusion that we cannot judge why gastric faradization benefits some people is reached. The author and the translator disagree as to the value of palpation of the stomach tube *in situ*, the former doubting its worth, the latter believing it to have merit. The advantages and disadvantages of gastroduaphony are thoroughly considered. Turck's work on the infection of the gastric mucous membrane from the mouth and pharynx is referred to.

The book is thoroughly modern and is a safe and sound exposition of the diseases of the stomach. The editing is splendidly done and the English is above reproach. The book is well printed and well bound.

PRACTICAL PATHOLOGY FOR STUDENTS AND PHYSICIANS. BY ALDRED SCOTT WARTHIN, Ph.D., M.D., Instructor in Pathology, University of Michigan. A Manual of Laboratory and Post-mortem Technic, designed especially for the use of Junior and Senior Stu-

dents in Pathology at the University of Michigan. Ann Arbor, Michigan: George Wahr, 1897.

No apology is needed for a good, reliable and practical book in English on laboratory technic, but when such a book is intended as a guide to the student, it must at least be accurate. This is not always the case in the work before us, which is mostly a compilation of the more important and commoner methods of laboratory technic.

Part I. deals with the directions for performing *post-mortem* examinations and occupies one-half of the book. Rokitsansky's method for opening the heart is given. This is undoubtedly the best method for the examination of this organ *in situ*, but a few well-chosen illustrations would be of great benefit to enable the student to understand this procedure. The directions given for obtaining uterine curettings is entirely out of place in a book of this kind.

In Part II. the student is told how to preserve, fix, harden, imbed, cut, and stain specimens, and the various methods of examining bacteria in fluids and in cut sections are given. The specific stains for inflammations and degenerations are also stated, and a chapter is devoted to the examination of the blood. Some of the methods are not clearly stated, as for instance, the mounting of paraffin sections. On one page we are told that the Klebs-Löffler bacillus is stained by Gram's method; further on, that it is not, and the student is left to decide the matter. This and other errors should not have crept in. However, the book may be consulted for many formulas and methods of daily use.

THERAPEUTIC HINTS.

Nutrient Enemata.—In many instances a nutrient enema composed only of whisky and peptonized milk will not be retained by the patient. A better combination, and one which will give more satisfactory results, is the following:

R	Beef peptinoids	.	.	.	.	3 ii
	Yolk of egg	.	.	.	.	No. 1
	Whisky	.	.	.	.	3 ss
	Tr. opii	.	.	.	.	m. v-x
	Salt. q. s.	.	.	.	.	
	Peptonized milk, q. s. ad.	.	.	.	.	3 vi.

A Sedative Syrup.—An excellent sedative combination in cases of insomnia or mild delirium, is the following:

R	Chloralis	.	.	.	.	3 iss
	Sodii brom.	.	.	.	.	3 iii
	Ext. cannabis ind.	} aa	.	.	.	gr. iss
	Ext. hyoscyami		.	.	.	
	Syr. simp., q. s. ad.	.	.	.	.	3 iii.

M. Sig. Tablespoonful, to be repeated if necessary after an interval of four hours.

A Palatable Method of Administering Castor Oil.—In the case of children who object to taking castor oil the dose may be made much less disagreeable if the oil is combined with glycerin and tincture of cardamon, as follows:

R	Ol. ricini	.	.	.	.	3 ss
	Glycerini	.	.	.	.	3 iii
	Tr. cardamonii comp.	.	.	.	.	3 i.

M. Sig. One dose.

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No. 9.

ORIGINAL ARTICLES.

THE NEED OF AN IMPROVED TECHNIC IN THE MANUFACTURE OF KOCH'S "T.R." TUBERCULIN.

By E. L. TRUDEAU, M.D.,
AND
E. R. BALDWIN, M.D.,
OF SARANAC LAKE, N. Y.

SINCE the announcement by Professor Robert Koch, last April, of a "New Tuberculin," by which he claims to immunize guinea-pigs against subsequent virulent inoculations with tubercle bacilli, and even to cure these animals of the disease, provided the treatment is begun within two weeks after the inoculation, some experience has already been gained with it by us at the Saranac Laboratory which shows evident imperfections of the substance as at present manufactured, and indicates the possibility of serious objections to its use in human beings until these shall have been overcome. Disclaiming any intention of criticising the value of the original and all important facts bearing on the production of artificial immunity set forth in Koch's recent paper, the present notes are merely confined to that part of our experience which relates to the character of the product as at present manufactured and sold; and briefly presents evidence thus far obtained which bears on the nature and defects of the preparation itself.

A careful reader, familiar with the technical difficulties involved in such work as the preparation of the new tuberculin, must be impressed at once with two facts: (1) The extreme difficulty of preventing accidental contaminations of the substance in the somewhat complicated process of manufacture without the use of heat or antiseptics. (2) The evident uncertainty of separating by centrifugation alone the uncrushed and still living tubercle bacilli from the fluid in which they are suspended. Our experience with Koch's "T. R." tuberculin would indicate that neither of these difficulties appears to have been as yet entirely overcome by the present manufacturers; and as the first requirement of an injection fluid intended to produce immunity is that it should be entirely free from danger, we have felt it our duty to make known such of our observations as relate to this point.

In all we have received seventy-six vials of the new tuberculin (designated "T. R.") and the fol-

lowing list indicates the dates of manufacture and the condition on arrival, arranged in the order of their coming:

No. of Vials.	Cork-stoppered.	Contamination.
5	6-4-'97	Not apparent to eye, but on culture and microscopic test all show various yeast-like growths. No attempts made to identify them.
5	6-4-'97	
10	12-4-'97	
5	12-4-'97	
1	3-5-'97	
2	1-6-'97	
	Glass-stoppered.	
1	15-6-'97	Apparent to eye; mould.
2	15-6-'97	Apparently sterile; confirmed by culture.
5	25-6-'97	
30	10-7-'97	Five contaminated; mould; twenty-five sterile.
10	10-7-'97	One contaminated; mould; nine sterile.

We used the first five vials on guinea-pigs at once, though not regarding it as a scientific experiment. The injections of this contaminated "T. R." tuberculin under the skin of guinea-pigs produced (except in one instance, to be referred to later) only temporary induration, which soon disappeared and was never followed by abscesses or any immediate constitutional disturbance in these animals. These observations seemed to indicate that the contaminating organisms found in "T. R." were non-pathogenic, that the only harm resulting from their presence was that the immunizing properties of the fluid might be impaired by their growth in it; and that with a little care in the selection of sterile bottles with the application of the culture-test to each, the use of the preparation in the human subject was perfectly permissible.

The possibility that the fluid contained tubercle bacilli was a much more serious matter. We made repeated microscopic examinations of the various specimens received at different times with negative results. Recently we centrifugated the contents of one or two bottles at a time and made microscopic examination of the sediment. In this sediment about six or eight well-stained tubercle bacilli were found in each cover-glass with little difficulty. That these tubercle bacilli might be living seems demonstrated by the following observations:

While attempting to test for ourselves the immunizing properties of Koch's "T. R." on guinea-pigs, we had under observation five animals, which, since we first received the fluid, on May 7th, had been injected according to Koch's directions, with increasing doses of "T. R." The first lot of tuberculin was exhausted after four doses, aggregating four mil-

ligrams of solid substance for each pig, and a long interruption in the injections was caused by a considerable delay in receiving enough sterile tuberculin for this purpose; but they were resumed on July 31st and have been regularly given since that date. On August 4th, we noted that while four of the animals had held their weight and seemed in no way injuriously affected by the treatment—though in one of these a very small inguinal lymph-node could be detected—the fifth and smallest animal had lost ten grams in weight and looked ill. This pig presented a small and steadily increasing swelling at the site of one of the injections, and one of the lymph-nodes in the groin was much enlarged. On examination, the subcutaneous swelling proved to be a cheesy abscess in which were found tubercle bacilli. The lymph-node itself was caseous, and its cheesy detritus contained also numerous tubercle bacilli. Plants on gelatine and in bouillon made from the cheesy pus taken from the abscess and node remained sterile, and proved that no living organisms other than tubercle bacilli were present. All the instruments used in making the “T. R.” injections, as well as the syringe, which had never before been used for inoculations, were always thoroughly sterilized by heat and the skin of the animals washed with carbolic solution before the injections were made, so that accidental infection of the animal may fairly be excluded. The only conclusion to be reached is, that one of the five animals developed tuberculosis as the result of inoculation with the living tubercle bacilli contained in the “T. R.” injections.

During the past three months we have been able to repeat at the Saranac Laboratory Koch's recently published method relating to the immunizing fluid, and to carry through several times, with our own virulent cultures, the processes of manufacture; following closely the rather meager details given by its inventor. All the technical difficulties encountered in this rather complicated process have apparently been overcome, though with much trouble, with the exception that we never have been able to satisfy ourselves that our “T. R.” did not contain some tubercle bacilli. Koch states that three-quarters of an hour centrifugation with an apparatus reaching a speed of 4000 revolutions a minute will throw down all the bacilli. We have used an electric centrifuge constructed with aluminum arms, made as light as possible, and operated *in vacuo*. From this we have obtained a much higher speed than 4000 revolutions a minute, without feeling quite certain that after whirling an hour the supernatant fluid, if carefully drawn off only to two-thirds the depth of the tube, was absolutely free from tubercle bacilli. We succeeded, however, in practically excluding them by revolving the centrifuge at

a speed of 1300 per minute in three periods of twelve hours each. After each period the supernatant fluid was pipetted two-thirds the depth, with a capillary tube and transferred to fresh tubes. The last sediment occasionally contained a stray bacillus. Whether Koch's experience with his immunizing fluid, and his confidence in the production of a strong immunity in the patient as a result of its injection, have been such as to make him feel that the presence of living tubercle bacilli in the new tuberculin can be disregarded on the ground that the introduction under the skin of a few more or less bacilli in patients already tuberculous is not a source of danger to them, is of course unknown to us. Without any personal or more general experience, however, of the ultimate immunizing effects of this method, it would seem that unless by repeated centrifugation or some other means we can rid the new tuberculin entirely of living tubercle bacilli, we are hardly warranted in applying it as yet to the treatment of human beings.

TUBERCULOSIS OF THE MESENTERIC LYMPH-GLANDS AND ITS TREATMENT BY ABDOMINAL SECTION.*

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THE importance of tuberculous diseases of the mesenteric lymph-glands as a causative factor in the production of other forms of tuberculosis seems to have been somewhat lost sight of during the past few years. While undoubtedly, under the name of *tabes mesenterica* or *abdominal scrofula*, the older writers included many forms of peritoneal and intestinal tuberculosis, there is considerable evidence to show that primary tuberculous disease of the mesenteric glands is by no means uncommon. These glands, like the cervical and bronchial, are frequently found on *post-mortem* examination to be the seat of tubercular changes.

In 107 autopsies on patients dying from abdominal tuberculosis, König¹ found the mesenteric glands involved in 44 per cent. Holt,² in 109 *post-mortem* examinations on tuberculous children, found tuberculosis of these glands in 35 per cent. Hecker,³ in 100 consecutive autopsies of children, found tuberculosis as a cause of death 27 times. The lymph-glands were affected in 92 per cent. of the cases, the bronchial twice as often as the mesenteric.

These statistics include secondary as well as primary infection, as they were compiled from examinations of subjects who had died of advanced tuber-

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culous disease; but they are important as showing the frequency with which the mesenteric glands may be infected. Moreover, the percentage of cases in which the lymph-nodes are the seat of tuberculosis is much greater than is the case with tuberculous intestinal disease, and would lead to the conclusion that Holt⁴ and others are in error in their claim that tuberculous mesenteric disease is usually secondary to tuberculous ulceration of the intestinal tract. More to the point, in the consideration of the primary form of this tuberculous glandular affection, are the statistics of Woodhead,⁵ who found the mesenteric glands affected in 100 out of 127 cases of tuberculosis in children, in 14 of which there were no tubercles in other parts of the body. Carr⁶ found the mesenteric glands alone affected five times in 120 children. In 70 cases various lymph-glands were diseased.

Osler,⁷ speaking of the tubercular involvement of the mesenteric glands, says that these cases are commonly spoken of as consumption of the bowels, but in a majority of them the intestines do not present tuberculous lesions. Rotch⁸ asserts that "in the majority of cases tubercular ileocolitis is secondary to tuberculosis elsewhere, and, in such cases, frequently follows tuberculosis of the mesenteric glands."

Indolent tuberculous mesenteric glands are not infrequently found in children who have died of acute disease, and who present no other evidence of tuberculosis.⁹⁻¹⁰ Orth¹¹ and Wesener state that the mesenteric glands are occasionally found infected in animals fed with tubercular tissue, without the mucous membrane showing any tuberculous lesion. It is a well-known clinical fact that children affected with non-tuberculous intestinal catarrh are particularly prone to tuberculosis of the mesenteric glands. As in the case of tuberculous cervical glands, the infection probably is produced by the bacilli passing through the mucous membrane before they have caused any visible lesion at the point of entrance.

Delafield¹² has reported a case in which death occurred five months after the cervical glands near the angle of the jaw were noticed to be enlarged. The autopsy revealed, in addition to other tuberculous lesions, a calcification and cheesy degeneration of the mesenteric glands. The calcification pointed to an early infection and subsequent recurrence in the same glands. Rotch¹³ reports the case of an infant, nineteen months old, who was seized with vomiting and diarrhea, and died in ten days. The autopsy showed enlargement of the mesenteric glands. Acute general peritonitis had resulted from the extension of the cheesy process in two of these glands through the peritoneum. Owen¹⁴ records a case where celiotomy revealed only a tuberculous inflammatory condition of

the mesenteric glands. Most of them were of the size of horse-beans. None had broken down. There was no miliary infiltration of the peritoneum, and no ascites. Recovery was rapid and complete.

Lucas,¹⁵ Councilman,¹⁶ Gairdner,¹⁷ Bamburgh,¹⁸ and Besnier¹⁹ have reported cases of primary involvement of the mesenteric glands. It is to be expected that clinical observations of this fact would be chiefly limited to acute forms of the disease, as the chronic form, unless giving rise to marked symptoms or to tumors of large size, would not be diagnosticated except accidentally by operation.

It is even probable that tuberculous disease of the mesenteric glands, as elsewhere in the body, may be congenital.²⁰ Considerable evidence is accumulating to prove the correctness of Baumgarten's views that the tubercular virus may be transmitted, though the disease may not appear till some time afterward. It has been shown that tuberculosis may exist in very young infants, and even in the fetus. Frobelius,²¹ in 16,581 autopsies on sucklings, found 416 with tuberculous lesions. Tuberculosis of the placenta has been demonstrated in a few cases, and Schmorl and Kockel²² found bacilli in the fetal tissues in one of three such cases. Armanni²³ produced tuberculosis in the guinea-pig by inoculations of the organs of the stillborn child of a tuberculous mother. Warthin²⁴ has reported an interesting and instructive case of extra-uterine gestation associated with tuberculosis of the tubes, placenta, and fetus. Cases of tuberculosis in very young infants are not uncommon, and this, with the fact that the lesions usually are in the deep-seated organs, lends strength to the theory of congenital and latent tuberculosis.

Mafucci²⁵ has shown experimentally that "tubercle bacilli inoculated into hens' eggs before incubation remain quiescent during the period of embryonic development, but cause the death of most of the chicks from tuberculosis in three weeks to four and one-half months after birth." Councilman²⁶ states that bacteria may remain alive, but quiescent, for long periods of time within the body, and then their pathogenic energies may be stimulated into activity through trauma or some other cause. The question of inherited and latent tuberculosis must evidently be attended by great difficulties, owing to the uncertainty connected with the finding of the tubercle bacilli in the fetal mass when no visible lesions are present. We must rest content for the present with the knowledge that the bacilli may be transmitted from mother to fetus, and after birth produce tuberculous lesions. Future investigations must determine the frequency with which this occurs and its importance as an explanation of the tuberculosis of early life.

The following cases observed by the writer are undoubted instances of primary tuberculosis of the mesenteric glands:

CASE I.—Mrs. M. G., thirty years of age. A patient of Dr. Eugene Boise. Presented a history of indefinite abdominal pain coming on during her second pregnancy. She grew worse after the birth of her child, had chills and fever, and lost considerable flesh. The abdomen was distended and very tender, but there was no ascites and the pelvis presented no abnormality. There was no diarrhea. The patient was brought to the hospital and an exploratory celiotomy performed February 3, 1891. The mesenteric glands were found enlarged, varying in size from a pea to an English walnut. With the exception of a distended condition of the intestines, the abdominal organs were perfectly normal. None of the glands was removed for microscopic examination, as the tuberculous character of the glandular tumors was not questioned, and the abdomen was closed. The patient recovered from the operation, has borne a healthy child since, and to-day is in good health.

CASE II.—The following abstract of this case is made for the purpose of this paper: "The patient is a delicate child, eleven years old. The family history is markedly tuberculous, three paternal aunts and one paternal uncle having died of phthisis. One maternal aunt also died at an early age of an acute form of the disease. While the parents never have manifested any tuberculous symptoms, they are people of weak constitutions and have little power of resistance. The elder sister, a girl of eighteen, has been an invalid during the past two years. Last May, in consultation, I saw another sister, aged twelve, who was in the last stages of general tuberculosis. This little patient had had abdominal pain for more than six years of such severity as to interfere with her studies and play. The abdominal symptoms became more marked three months before death. Ascites and general infection followed. Some few weeks after her death I was asked to see the present patient, whom the family were positive was developing the same symptoms which had proved fatal in her sister's case. A most careful examination failed to reveal any localized tuberculous process. The prominent symptoms were indefinite abdominal pain, a troublesome nausea and general malaise. There had never been any irregularity of the bowels. Tonic treatment proved of little avail except in remedying the marked anemic condition. January 11th I saw her again after an interval of several months. Upon examination I found a localized tenderness over an area as large as the palm of the hand, situated two inches to the right and an inch above the umbilicus. Otherwise the examination was negative.

"The family was advised that the localized abdominal tenderness was probably due to a tuberculous process of some kind, and an exploratory celiotomy was advised. This was performed at Butterworth Hospital three days later. An inch-and-a-half incision was made in the median line midway

between the pubes and umbilicus. The exploring finger, carried to the site of the abdominal tenderness, detected a chain of enlarged glands in the mesentery of the small intestine. These glands averaged $1\frac{1}{2}$ cm. long by 1 cm. wide. They were freely movable under the peritoneum. A small loop of gut, together with the mesentery, was brought outside and one of the glands removed for microscopic examination, and the peritoneal incision brought together by fine catgut. The enlarged glands were distributed throughout the mesentery, but nowhere were they in such numbers as at the place just described. The intestines appeared normal, as did the appendix. The following is the report of the hospital's pathologist, Dr. J. B. Whinery:

"Enlarged gland from the mesentery, hardened in absolute alcohol and imbedded in paraffin. Cut sections stained for tubercle bacilli. Carbofuchsin method. Examination negative. Sections stained with lithium carmine and picric acid showed proliferation of glandular tissue, occasional groups of cells, probably of early tubercular formation. Giant cells absent. No caseation or breaking down of tissue."

CASE III.—Miss G. H., aged seventeen, sister of patient described in Case II. Has always been a delicate child. Although ambitious and anxious to excel in her studies, she has been obliged to give them up because of poor health. She began to experience indefinite abdominal pain some two years ago. During the past year she has been much prostrated by the pain, and recently a localized tenderness developed a little to the right and above the navel. She has never had diarrhea. With the exception of the area of localized tenderness the abdomen presented no abnormality. Examination of the lungs and sputum was negative. Tonic treatment proved valueless, and the patient continued to lose flesh and strength. After the marked improvement following celiotomy in her sister's case, the patient and family asked that the same line of treatment be instituted for her relief. Accordingly, the abdomen was opened January 28, 1897, by a small incision midway between the umbilicus and pubes. There existed the same enlargement of the mesenteric glands, situated directly under the area of localized tenderness. These glands were slightly larger than those in Case II., averaging 2 cm. long by $1\frac{1}{2}$ cm. wide. Four were enucleated for microscopic examination, and the incision in the peritoneum closed with catgut. As in Case II., except the enlarged glands, the abdomen was perfectly normal. The abdominal incision healed by first intention, the patient made a good recovery, and left the hospital at the end of two weeks. Microscopic examination of the removed glands showed:

"Size, $1\frac{1}{2}$ c.m. by 2 c.m.; firm. Examination conducted as in Case II. Proliferation of small round cells, with here and there a group of endothelioid cells. No giant cells present. No caseation. Tubercle bacilli present, but very scarce."

The ultimate result of the operations upon these two patients can only be conjectured. They are

not reported as cures, but merely as examples of tuberculosis confined to the mesenteric glands, presenting symptoms which were temporarily relieved by operation. Both these patients at the present writing (Aug. 13, 1897) show marked local and general improvement. The abdominal pains have entirely ceased. In Case II. there is no localized tenderness, while in Case III. it is only elicited by deep pressure.

In view of the localized abdominal tenderness present in these two cases, it is possible that even small enlargements of the mesenteric glands may give rise to symptoms which may lead to a diagnosis of tuberculous lesions. The operation in Case II. was performed for abdominal pain and tenderness localized to the right and above the umbilicus. Tuberculosis of the peritoneum or omentum was suspected from a knowledge of the origin and course of the disease causing the sister's death. The similarity of the symptoms presented in Case III. led to the diagnosis of tuberculous mesenteric disease, which subsequent operation proved to be correct.

While the history of the cases of these three sisters is, perhaps, unique, rendering the diagnosis in Case III. comparatively easy, it is possible that closer attention paid to obscure abdominal pain and localized tenderness in young children with a tuberculous family history, will lead to the diagnosis of tuberculosis of the mesenteric glands before the disease has advanced to a point where operative treatment holds forth but little hope of recovery.

Thompson,²⁸ in speaking of the diagnosis of *tabes mesenterica*, after stating that the pathognomonic sign of the disease is the presence of tumors palpable through the abdomen, and that this sign is only present in advanced stages of the disease, says "the patient affected by *tabes mesenterica* complains almost continually of pain, the seat of which is never acute nor analogous to colicky pains unless the *tabes* is accompanied by inflammation or ulceration of the intestinal canal. The pain is not superficial, and is not accompanied, like that of chronic peritonitis, by considerable distention of the belly, vomiting, and dulness, nor is it attended, like that of intestinal ulcers, by diarrhea. The pain in *tabes* often continues during a very long time, and sometimes for years without any other remarkable symptoms presenting themselves."

When the disease has progressed still further, and general involvement and enlargement of the glands ensues, the symptoms become more marked. The nutrition of the patient may be seriously interfered with from the pressure of the tumors upon the lacteals and thoracic duct. Tympanites, diarrhea, and peritonitis, with or without agglutination of the

bowels, are quite constant accompaniments of the later stages of the disease. From a fusion of the glands, very large tumors may be produced, growths the size of a child's head having been reported.²⁹

The pathologic changes occurring in tuberculous mesenteric glands are the same as in other lymph-nodes of the body, save that the glands in this locality seem rather more prone to calcification than elsewhere. Caseation is not infrequent, and explains the not uncommon association of tuberculous peritonitis with mesenteric glandular tuberculosis. Instances of the extension of the tuberculous glandular lesions to the peritoneum have already been cited. The extension is oftenest by contiguity through the peritoneum, as a localized peritonitis usually attends a caseous mesenteric gland. It is possible, however, for the bacilli to be carried to the peritoneum by the reversed lymphatic currents which are known to exist in these vessels. Whatever may be the mode of the peritoneal infection, the danger of such infection is considerable, and its occurrence means the lessening of the patient's chances for ultimate recovery.

In a recent elaborate and excellent article, Vaughan³⁰ estimates that while one-third of all men are affected, at some period of their lives, with some form of tuberculosis, only one-seventh die from the disease. This would show that tuberculosis is far from being the fatal disease it is supposed. Vaughan urges the importance of early diagnosis while tuberculosis is an unmixed infection. In this stage he believes it to be one of the most easily curable of bacterial diseases. He claims that tuberculosis begins as a local disease, and if the resistance of the tissues can be increased, extension of the disease does not occur, and it dies out or becomes localized.

In the case of tuberculous mesenteric glandular disease, how can this "increased resistance" of the tissues be brought about? Is there any ground for believing that the tuberculous glandular lesions will be at all influenced by abdominal section, which has proved so efficacious in the peritoneal type of tuberculosis?

The writer has been led to a consideration of these questions by a study of the three cases of mesenteric disease detailed above. The improvement, and in one case cure, following abdominal section, where the peritoneum was not involved and the tuberculous disease confined to the mesenteric glands, has suggested the advisability of the adoption of this treatment in cases of this description.

The limits of this paper forbid the consideration of more than beginning, uncomplicated mesenteric glandular enlargements. Ablation of these glands as a curative surgical procedure will not be considered,

The peritoneum may be considered as a large lymph-sac, lying upon and directly continuous with lymphatic channels, for which the mesenteric glands act as filters. Hence, it is not unreasonable to suppose that certain marked physiologic changes in the peritoneum will, to some extent, affect these lymphatics with which it is so intimately connected, and that through these means changes will be wrought in the mesenteric glands.

It is pretty generally recognized that the cure of tuberculous peritonitis is in some manner accomplished by the mere opening of the abdominal cavity. At the time of the appearance of König's⁸¹ now classic paper, it was thought that the cure of peritoneal tuberculosis was largely dependent upon the use of iodoform and antiseptic irrigation. In a second paper, six years later, König⁸² analyses 130 recorded cases of tuberculous peritonitis, in all of which a major operation had been performed. The nature and amount of manipulation, however, did not seem to effect the result, nor did the nature of the disinfectants used. At present, the consensus of surgical opinion is against irrigation and drainage in this class of cases, better results following their omission.

A great many theories have been advanced explanatory of the cure of tuberculous peritonitis following celiotomy, none of which can be said to be entirely satisfactory. Any consideration of this question must take into account the natural tendency to cure in all forms of tuberculosis, notably in the osseous, lymphatic and peritoneal types of the disease. It is not progressively fatal under all circumstances, as is cancer. Tuberculous lesions may be considered in a state of unstable equilibrium, where a very slight change in the living cells near the seat of the tubercle may turn the scales in favor of retrograde changes in the tuberculous process.

No such physiologic changes can be produced anywhere in the body as a result of opening the peritoneal cavity. Tait³³ has reported the disappearance of myomatous and a marked improvement in malignant growths following abdominal section. Gusserow³⁴ has noted the same in malignant peritoneal growths, and Mackenrodt³⁵ has reported a cure of a presumably malignant retroperitoneal tumor by a simple celiotomy. Tait calls attention to the great thirst following celiotomy as indicative of the marked physiologic changes taking place in the peritoneum. The increased absorptive power of this serous membrane following section has been long recognized.

While these facts cannot be disputed, the *modus operandi* of the cure of tuberculous peritonitis through abdominal section is difficult of explanation, and has given rise to much speculation. It cannot be due to mere evacuation of the fluid and the formation of ad-

hesions which strangle the tubercle bacilli, as was held by White,³⁶ Cabot,³⁶ and Van der Walker,³⁶ for cases of peritoneal tuberculosis without effusion have been reported cured by celiotomy. Evacuation of the ascitic fluid, the restoration of normal abdominal tension and the rest thereby afforded the peritoneum, are, no doubt, important, although not the sole factors in the cure.

Cameron³⁹ holds that ptomaines are held in the ascitic fluid and favor the propagation of the disease. Lindner⁴⁰ attributes great importance to the power of absorption of the serous membrane which had been impaired by the lesions. Weinstein⁴¹ holds much the same view. Roersch⁴² maintains that celiotomy cures by relieving the ascites, which by compressing the vessels hinders absorption of the inflammatory products. Lauenstein⁴³ suggests that drainage, with consequent loss of moisture and the admission of light, prove hostile to bacterial growth. Mosetig-Morhof⁴⁴ believes that the cure results from the irritation of the peritoneum following the entrance of air. Morris⁴⁵ claims to have isolated a toxalbumin from the bacteria of putrefaction developed from the exposure of the ascitic fluid to the air, which destroys the tubercle bacilli very promptly.

All the above-mentioned theories depend upon the presence of ascitic fluid and fail to explain the curative effects of celiotomy upon the dry forms of peritoneal tuberculosis. Probably a truer explanation of the *modus operandi* has been arrived at by Nannotti⁴⁶ and Bacciochi from their experimental studies on the lower animals, chiefly dogs. Among the other conclusions of these observers may be mentioned:

1. That the disappearance of the peritoneal tuberculosis after celiotomy is by resorption and the surrounding of the tubercle with connective tissue.
2. The resorption of the tubercle occurs in consequence of the destruction of the tubercle exciters (phagocytosis) and the formation of new vessels. The latter is very marked in the experiments on dogs.
3. The physiopathologic action of celiotomy in healthy animals consists in an inflammatory reaction of the peritoneum accompanied by an increase in its resorbing power.

Evidence confirmatory of the correctness of these conclusions is furnished by D'Urso,⁴⁷ who reports a case of tuberculous peritonitis in which four operations were required within nine months. The healing process in the tubercle was well observed; an invasion of leucocytes destroying the epitheloid zone, vascular neoformation to the center of the tubercle and substitution of the latter by young inflammatory tissue. Stchégoleff⁴⁸ maintains that celiotomy causes an inflammatory action characterized by an infiltra-

tion of embryonic cells (phagocytosis) and an active development of endothelial cells. This new tissue organizes and the specific elements of tuberculosis perish or are absorbed.

Celiotomy then may be said to be the factor which furnishes "increased resistance" to the tissues, causing an influx of phagocytic cells to the diseased areas. Through the agency of these cells, either alone or assisted, the tubercle bacilli perish. Future investigations must determine whether this is accomplished by the phagocytes alone (Metschnikoff⁹) or whether the bactericidal power of the extracellular fluids play an important part (Buchner,⁵⁰ Nuttall⁵¹). The new tissue which is formed by the inflammatory process may remain as a fibrous nodule or may be completely absorbed by the peritoneum. The latter process is in reality a complete *restitutio ad integrum* as proved by secondary celiotomies in cases where the first operation revealed tuberculosis of the peritoneum. Such cases are reported by McCosh,⁵² Richelot,⁵³ Clarke,⁵⁴ and others. There is every reason to believe that the processes described above extend to the lymph-channels lying beneath the great serous lymph-sac, with resulting phagocytosis and new tissue formation in the tuberculous glands.

The mesenteric glands are usually found enlarged to a greater or less extent in cases of tuberculous peritonitis, yet this enlargement is not mentioned as still existing in those cases where secondary celiotomies have been performed, showing that the curative effects of the operation have probably extended to them. Therefore, under these circumstances celiotomy should be resorted to as soon as the abdominal symptoms are sufficiently urgent to make the diagnosis of tuberculous mesenteric glandular disease reasonably certain.

Summary.—1. Primary tuberculous mesenteric glandular disease is by no means uncommon.

2. While it may be, it is not, as a rule, secondary to intestinal tuberculosis.

3. The tubercle bacilli may pass to the mesenteric glands through the intestinal mucous membrane without leaving any visible lesions.

4. Tuberculous mesenteric glandular disease may be congenital, and the tubercle bacilli may remain latent in these organs during long periods of time.

5. Under favorable conditions, beginning tuberculous disease of the mesenteric glands can be diagnosed without the presence of palpable tumors.

6. These glandular enlargements may result in caseation or calcification.

7. In cases of caseation, the danger of extension of the tuberculous process to the peritoneum is considerable.

8. When taken in season tuberculosis is not neces-

sarily a fatal disease if, in any way, "increased resistance" of the tissues can be obtained.

9. Abdominal section produces powerful physiologic changes in the peritoneum.

10. It has been shown that all varieties of tuberculous peritonitis, the dry as well as the ascitic, are susceptible to cure by celiotomy. Hence, the theories which fail to explain the cure resulting in the granular variety are faulty.

11. The true explanation of the cure of tuberculous peritonitis resulting from celiotomy is to be found in the phagocytic action of the embryonic cells, together with the formation of new vessels and connective tissue.

12. This new tissue may remain as fibrous nodules or it may be entirely absorbed by the peritoneum.

13. From the position of the peritoneum, lying as it does upon a bed of lymphatics for which the mesenteric glands act as filters, there is every reason to believe that the same changes produced by celiotomy on peritoneal tuberculosis will occur in the tuberculous mesenteric glands.

14. Abdominal section should be advised in tuberculous mesenteric disease as soon as the abdominal symptoms make the diagnosis reasonably certain.

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⁷⁰ Buchner, *Centralbl. f. Bact. und Parasitenkunde*, 1889, Bd. v, p. 816.
⁷¹ Nuttall, *Rev. Scientifique*, November 2, 1889.
⁷² McCosh, "Reference Handbook of Medical Sciences," Supplement, p. 720.
⁷³ Richelot, *Rev. de Chir.*, 1893.
⁷⁴ Clarke, *Lancet*, November 11, 1893.

EARLY DIAGNOSIS AND MISTAKEN DIAGNOSIS IN CASES OF TUMOR OF THE BREAST.¹

By CHARLES A. POWERS, M.D.,
OF DENVER, COL.

THE frequency with which the female breast is the seat of a tumor is well known to all practitioners of medicine, but the difficulties attending accurate diagnosis are appreciated only by those who see many of these cases; and as correct diagnosis forms the key-note to successful management and favorable prognosis, I have felt that a recital of some of my own errors might be of value to others.

A study of cases in which the histologic condition has been at variance with the clinical diagnosis has been of much interest, and has served to impress on me the wide range of variation in symptoms which these mammary tumors present, and the ease with which malignant growth may be considered benign, or a benign growth be thought malignant. Of such vast importance in the management of malignant growth of the breast is early diagnosis that too much stress cannot be laid on the principle that every lump or nodule in the gland is to be explored unless there be some distinct contraindication; such contraindication will rarely be found. Women are prone to overlook these lumps or to conceal them, and all surgeons know how frequently they appear with a mammary tumor, which, perhaps, is as large as one's fist. The remedy for this, so far as a remedy may be found, lies in impressing on the laity the fact

that all lumps and growths are important, no matter how small they may be, and that competent advice thereon should be sought at the earliest possible moment. Physicians can do much in this way; they should lose no opportunity of informing their patients that all lumps and growths ought to be attended to, and that the benign tumor of to-day may be malignant in the future. Only too often does the family practitioner, when shown a lump in a woman's breast, say that it is unimportant, and that he will look at it again in a month or two. The woman's fears are allayed, she neglects to again call the physician's attention to the matter, and when she does seek advice the growth is very probably beyond possibility of cure. During the past month two such patients have come to my office. In each the family physician had advised delay until the growth had become large, and then had removed only the breast. When coming under observation each scar was the seat of inoperable recurrence.

To many of us these are trite words, but every surgeon knows how often unwise delay or incomplete operation leads to a speedy and fatal termination, and I feel that these principles cannot be repeated too frequently or impressed too strongly. Successful management of malignant disease may to-day be summed up in these words: Early recognition, early and thorough operation, and careful surveillance of the patient for many years afterward. Progress in this direction is steadily being made, and the future undoubtedly has in store for us results which now seem impossible of attainment.

For some years it has been my custom to enter in my case-book the provisional clinical diagnosis of a given tumor and to place opposite this, after operation, the result of the microscopic examination of the growth. These parallel columns not infrequently differ materially. Permit me to cite some of the errors:

CASE I.—Mrs. S., thirty-five years of age, was referred to me March 5, 1892, by Dr. Geoffrey R. Bourke. For some months she had noticed a small lump in the upper, outer quadrant of the left breast. This mass was about the size of a robin's egg, somewhat flattened, rounded, freely movable, and the skin over it normal, the nipple not being affected. There was nothing to be felt in the axilla or in the supraclavicular space. The "feel" of the tumor seemed to be that of a fibro-adenoma, and the patient and her husband were advised that the growth was probably benign, but that it possibly might be found to be malignant. Their consent was obtained to a complete operation in case it was thought advisable. On cutting into the growth it seemed to be malignant, and the breast, pectoralis major muscle, and axillary contents were excised. Microscopic examination of the growth proved it to be a medullary

¹ Read before the Denver and Arapahoe Medical Society, April 13, 1897.

carcinoma. One small malignant gland was found in the axillary fat. The patient had a secondary mass removed two years later and died of internal recurrence at the end of three years.

CASE II.—This case was similar to the foregoing, except in that the mammary lump, which was the size of an almond, seemed to be so certainly benign that it alone was removed. The microscope showed it to be carcinoma, whereupon the "complete" operation was performed. There were two or three small malignant glands in the axilla. This patient is free from recurrence, and it is now more than five years since her operation. She was thirty-two years old at that time.

CASE III.—Mrs. X., forty years of age, was referred to me during June, 1893, by Dr. T. T. Janeway of New York. For some months she had noticed the progressive growth of a lump in the right breast. Examination revealed an irregular mass the size of an apple in its inner, upper quadrant. This mass was deep seated; it seemed to be hard and partially fixed. Provisional diagnosis of carcinoma was made. At the time of operation an incision was made into the mass, and it was found to be a simple cyst. This alone was dissected out.

CASE IV.—This was another instance of the same error. The patient, a woman thirty-eight years of age, was referred to me by Dr. Jas. A. Hart of Colorado Springs during February of the present year. A week before I saw her she first noticed a mass the size of a small fist in the upper, inner quadrant of the right breast. She at once showed this to Dr. Hart, who pronounced it cancer and immediately sent her to me for operation. On careful examination I could not doubt that the growth was malignant. It was hard, nodular, and non-fluctuating; it seemed to be carcinoma. At the time of operation incision into it revealed a large, irregular cyst. This was dissected out. At one or two places the cyst wall seemed to be hard and suspicious-looking, and Dr. H. C. Crouch, who was present, examined it microscopically, but failed to find evidence of malignancy.

In each of these instances incision into the tumor at the time of operation revealed the cystic nature of the growth. The exploring needle before operation would have shown as much, but the diagnosis seemed so fairly certain that I did not make use of it. We are not to forget that cysts and abscesses sometimes are mistaken for malignant growths and an entire gland needlessly sacrificed. I myself came very near doing this in Case V., in which a mass, which I thought was probably carcinoma, proved on incision to be a hematoma (New York Cancer Hospital), and in another (Case VI. of the present series), in which I mistook tuberculosis of the breast for cancer. Fortunately, the entire breast was not sacrificed in the first of these instances, though it was deliberately removed in the second. I was not so fortunate, however, in Case VII., for in

this I removed the breast and axillary contents for a small lump, which seemed at the time of operation to be carcinoma, but which the microscope showed to be a fibro-adenoma. Some of you may remember that I reported the case to this Society some eighteen months ago, contrasting it with another in which a small lump, which seemed at the time of operation to be benign, proved to be malignant, and I was obliged to return and complete the removal of the breast, pectoralis major muscle, and axillary contents. Added cases have served to impress upon me the value of a microscopic examination of uncertain, or, indeed, of fairly certain, tumors at the time of operation. This consumes but a few moments, perhaps eight to twelve minutes, and may be of great diagnostic value. So, when a tumor, which we think to be benign, is found by the pathologist to be malignant, our course is clear, while if he fails to find evidence of malignancy we are justified, in ordinary cases, in removing the growth itself, submitting it to him for thorough examination, and being governed by his final report as to further procedure.

True, there are many breast tumors in which we need no evidence in addition to the clinical signs, indeed, the majority fall in this category, but there are many in which we require all possible aid. An excellent illustration of this, though in another part of the body, came under my observation a few weeks ago. A young man, twenty-six years of age, came to me with a small tumor of the parotid, which I thought, without doubt, was benign. I removed it and sent it to Dr. Crouch, who pronounced it myxomatous carcinoma, whereupon I was forced to return and remove the entire parotid gland and the adjacent tissues. In passing, it may be said that Dr. C. B. Porter, who wrote the excellent article in Dennis' "System of Surgery," says of these parotid tumors: "The diagnosis, and the decision to attempt removal of the tumor only or of the whole gland, should be controlled by the microscope at the time of operation, when possible."

Exceptional lumps in the breast may warrant delay and watching, but this delay is not to be made without careful thought and study. I have seen three instances of what Mr. Herbert Snow calls "Dispersible Tumors of the Breast," lumps which disappeared in a few weeks or months. One of these was in a little girl seven years of age, from whose mother I had removed a fibro-adenoma of the mamma.

Such admirable papers have been recently published by Bull, Richardson, Warren, Halsted, and others, that I refrain from speaking of the provisional differential diagnosis and management of mammary neoplasms, and content myself with endeavoring to

impress upon you the absolute importance of the earliest possible attention in such cases, as well as my own conviction, a conviction based on the operative care of some ninety patients with breast tumors, that accurate clinical diagnosis is often difficult, and, indeed, at times impossible.

CATARRHAL SORE THROAT IN GENERAL PRACTICE.¹

By J. M. G. CARTER, M.D.,
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DURING the spring of 1897 the prevailing wind on the western shore of Lake Michigan, in Northern Illinois, was from the lake, much of the time from the northeast, and sometimes from the southeast. The season developed many cases of catarrhal sore throat, especially during the periods when the northeast wind was the prevailing one. So marked was this that a practitioner at the time expected a new contingent of patients affected with sore throat when he arose in the morning. On the contrary, if the wind prevailed from the west, if for only a few days, the disease rapidly declined, and no new cases occurred. At one time the northeast wind prevailed for two weeks, and during this period the affection was particularly obstinate. In one instance, in a patient susceptible to sore throat, in whom, under ordinary circumstances, similar attacks have been controlled after three or five days, the sickness was prolonged to ten days, and there was no appreciable cause for this persistence except the continued lake wind. Many such cases were encountered, so many, in fact, that the affection was marked as an unusual divergence from the typical cases of catarrhal sore throat so frequent in this region.

The doctrine that the lake winds have a very decided effect upon the presence and occurrence of catarrhal forms of sore throat seems to be a rational and scientific conclusion. The humidity and temperature, the character of the winds, their force and direction, and the presence or absence of ozone in the atmosphere exert a marked influence upon the prevalence of these diseases, either by their effect *per se*, or by creating a congenial soil or favorable culture medium for the bacteria which accompany most of these cases. I have elsewhere² given an extended discussion of this subject and need not enter into further consideration of it here.

These cases commence with a sense of stiffness or rigidity, and a dryness or uncomfortable feeling in the throat, sometimes with pain upon swallowing.

There is a general feeling of malaise, occasionally muscular aching or soreness, which not infrequently is accompanied by rigor, or chilliness, and consequent fever. Thirst, anorexia, and at times nausea, are present. The tongue is coated. Often, there is a particular spot in the throat mentioned as being especially painful, as in the invasion and progress of suppurative tonsillitis. Headache is a common symptom. Restlessness and insomnia occasionally exist. Itching in the nasopharyngeal region and in the ears is common and very annoying. Some cough is present in many cases, without expectoration at first, but later, sputum, consisting chiefly of mucus, is easily raised. Hoarseness is common and aphonia frequent. The two chief features which have distinguished these cases from similar epidemics during previous years are the persistence of the attack and the frequent presence of aphonia. If one member of a household is affected all are likely to be. Occasionally the inflammation extends downward beyond the larynx, and the symptoms and signs of bronchitis appear. The appearance of the throat upon examination is characteristic. The mucous membrane is red, the redness extending over and involving the surface of the tonsils, fauces, pharynx, base of the tongue, and larynx.

In many cases there is a point of intensity of redness, especially sensitive to touch, usually located in the fauces, or on one of the tonsils. This is where the greatest distress is experienced when swallowing, and at the same time, especially when this point is located on the tonsil, the patient in some instances complains of a cramp-like sensation. In the work already referred to I have shown that micrococci are abundant in these catarrhal sore throats, and in the cases here mentioned the chief habitat of these organisms, or at least the point of concentration, is in the area of intense redness just mentioned.

During the first few hours of this disease the mucous membrane is dry and secretion limited, but the membrane is swollen and thickened. This condition extends to and involves the larynx and vocal cords in many cases, hence the hoarseness and occasionally the aphonia. After one or two days the mucous covering is moistened by an exudate, and by an increase of mucus, and the most distressing symptoms are allayed or somewhat abated. The infiltration not only causes swelling of the mucous membrane, but it often involves the submucous tissues and almost closes the throat by the enlargement of the tonsils, the tumefaction of the fauces and the fulness of the deeper structures of the pharynx and larynx. The involvement of the tonsils can be considered only as a phase of the disease, since it was so common; but only one patient in about seventy de-

¹ Read at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, June 1-4, 1897.

² "Catarrhal Diseases of the Respiratory Passages," by J. M. G. Carter, M.D.

veloped suppurative tonsillitis. There were cases in which the inflammation involved the deeper structures but in which resolution occurred before suppuration supervened. No cases of diphtheria occurred during the period here included. The papillæ on the base of the tongue were frequently enlarged and red, dry at first, but later moist.

The pathology of these cases is simple, being that of an ordinary catarrhal inflammation. If the cause is merely climatic, the changes of humidity and temperature, or ozone, or the wind act directly upon the mucous membrane and produce an irritation; if the cause is bacterial, the point of inoculation is the throat, and possibly the area of greatest intensity of redness. In either case, the first effect seems to be an instantaneous, or at any rate very brief, contraction of the minute vessels, followed immediately by dilatation of the capillaries, and increased rapidity of circulation. When the terminal vessels become engorged, the blood flow is retarded, and, later, stasis, or a condition approaching this is reached, and diapedesis occurs. This is the stage of exudation upon the surface or infiltration in the deeper structures. These cases generally stop at this stage of the pathologic process and resolution begins, very few of them passing on to suppuration, as in quinsy. The duration, under ordinary circumstances, is from three to five days, but, as already intimated, a large number have been prolonged this season to ten days.

The cause and pathologic condition suggests a rational course of treatment. The presence of bacteria in all cases, and of pathogenic bacteria in many, makes it advisable to employ germicides for cleansing purposes. The congestion requires soothing and some times astringent applications. When the first stage is passed and that of exudation begins, the same kind of local treatment produces good results. The fever and muscular soreness require internal treatment.

In the local treatment I have used many different preparations in the search for some one which would give quick and satisfactory results. The quickest cure in my experience has resulted from the use of a mixture consisting of equal parts of tincture of iodine, glycerin, and carbolic acid, of Löffler's toluol solution, or of hydrozone in the order named. These may be applied by means of a cotton pledget attached to a stick. The solution should be kept in contact with the diseased part during ten or fifteen seconds, after which the patient may use a gargle of sterilized water. The applications ought to be made twice a day, and a gargle of permanganate of potash used every half hour or hour during the intervals between treatments.

If a milder and more soothing application is required, eucalyptol and bismuth compound may be used. This preparation, as well as hydrozone, may be conveniently used with an atomizer. In many instances, especially in children, the first two preparations given above will not be used, and some other will be necessary. In these cases nothing is better than hydrozone, and as this may be used as a spray in from twenty to twenty-five-per-cent. solution, it is also a convenient remedy. A peculiar tickling which induces cough will instantly be relieved by it. Local treatment for the larynx should consist chiefly in inhalations of the atomized vapor of hydrozone, menthol, eucalyptol, and bismuth compound with the essential oils. The air of the patient's room should be kept at a relative humidity of about seventy-four per cent.

Internally I have used with marked success a tablet consisting of two grains each of acetanilid and salicylate of soda, and half a grain each of quinine sulphate and caffein citrate.

When these cases are neglected, and when the initial treatment has been improperly carried out, they frequently pass into a chronic state. The treatment may then require considerable modification. Hydrozone may still prove of great benefit, and frequently surpasses all other means of cure. It may be used by atomization in twenty-per-cent. solution, or as a gargle. Hot wine, whisky, and alcohol gargles twice a day stimulate the local circulation and cleanse the mucous membrane of tenacious secretions and exudations. Menthol, by inhalation or in weak solution as a gargle, acts well in some cases, relieving hoarseness and soreness. It is an antiseptic and anodyne and contracts the capillaries, thus diminishing secretion. The essential oils may be used by nebulization, with very marked relief in many instances.

The most important treatment in chronic catarrhal diseases of the throat, like that in chronic bronchitis, is a change of climate. A dry, warm, and equable climate is required in most instances, but frequently a moist climate is better. When this change cannot be secured, certain protective and prophylactic measures are advisable. Removal of mufflers from around the neck and the substitution of a silk handkerchief in front of the throat when out of doors in cold weather is to be recommended. Daily morning ablutions of the neck, throat, and chest with cold water, and gargling of the throat and washing of the nose with the same are of great service. Patients who are obliged to be out every day will find it advantageous to use a gargle twice daily consisting of alcohol and glycerin, each fifteen per cent., and water seventy per cent. This has the effect of

strengthening the resisting power of the mucous membrane. General tonic measures are often necessary, as in the treatment of bronchitis.

CLINICAL MEMORANDUM.

A CASE OF GUNSHOT WOUND OF THE BRAIN, CAUSING PARALYSIS OF THE ARM; RECOVERY.

By J. B. FATTIC, M.D.,
OF ANDERSON, IND.

OTTO L., nine years old, on February 22, 1897, was shot in the forehead with a 32-caliber revolver. I found the patient unconscious, there being moderate, irregular convulsive movements, except in the left arm, which was paralyzed. The pulse was very rapid and scarcely perceptible, the skin pale and cold, and respirations irregular and shallow. There was a small, circular wound about half an inch above the right superciliary ridge and one inch to the right of the median line of the forehead, which extended through both tables of the frontal bone and into the brain.

A sterile olive-tipped probe was carried upward, backward, and slightly outward along the track of the bullet

FIG. 1.



Skiagram of a 32-caliber bullet lodged in the brain. Trans-frontal exposure.

about three and one-half inches, but the missile, not being detected at that depth, or in the vicinity of the entrance-wound, it was deemed best to desist from further attempts to locate it. A few small bone splinters, a small amount of brain substance, powder-grains, and blood-clots were removed, the slight hemorrhage was checked, and the wound irrigated with sublimate solution, sutured, and covered with sterile iodoform collodion gauze.

After free stimulation, reaction from shock soon occurred and the patient became semiconscious, remaining so for five days, after which time he was rational. In spite of attention given to the powder-burns, considerable purulent conjunctivitis occurred, but the wound fortunately escaped infection and readily healed, although it was in close proximity to the pus.

The paralysis of the left arm continued complete until the seventh day after injury, when rapid improvement began and resulted in recovery in a few days, except a slight degree of muscular weakness. The boy returned to school a few weeks later and now, seventeen months afterward, is apparently as well as ever, no unfavorable symptoms having appeared.

FIG. 2.



Skiagram of a 32-caliber bullet lodged in the brain. Fronto-occipital exposure. A wire was so placed as to show the median line of the forehead.

The accompanying skiagrams were recently secured for the writer by Mr. B. P. Remy, of this city. The transfrontal exposure was but eight minutes and the fronto-occipital exposure but twenty minutes, a matter of decided advantage when a restless patient is the subject. In the fronto-occipital skiagram (Fig. 2) a wire was placed so as to show the median line of the forehead.

From the history of the case it is evident that the motor area of the right side of the brain, controlling movements in the left arm, was injured, and the early relief from the paralysis and the present location of the bullet, as shown by the skiagrams, warranted the belief that the missile must have retraced its passage along the brain-wound, assisted by the force of gravity.

MEDICAL PROGRESS.

Purulent Pericarditis Cured by an Operation.—GARBER reports, in *The Jour. Amer. Med. Assn.*, June 26, 1897, a case of purulent pericarditis in a girl aged twenty-one, produced by puncture with a steel crochet-needle in the fifth left interspace, which was rapidly and completely cured by incision and drainage. The hook of the needle carried a thread into the pericardium, and it remained there

twenty-four hours before being removed, causing septic pericarditis, with fever and restlessness, but neither chills nor pain. Operation was finally consented to, and was performed fourteen days after the accident. Through the fifth space the pericardium was opened, and with the help of the finger and irrigation, a quantity of pus and masses of purulent blood-clots were removed. The cavity was drained with a wick of iodoform gauze. Twenty-four days after the operation the patient was discharged cured.

Strangulated Hernia Twenty-seven Years After Ovariectomy.—In the *Amer. Jour. of Obstetrics*, June, 1897, an interesting sequel of events is described by STOKES. During 1869 an ovariectomy was performed by Atlee upon a woman aged forty-eight. Adhesions were very troublesome, and the operation lasted four hours. The patient was not expected to live, but she recovered after a long period of suppuration and went actively about her duties, with a ventral hernia, until last February, when, at the age of seventy-five, the hernia became strangulated and death ensued in chloroform narcosis during preparation for operation. The strangulation was brought about by pressure of the ring upon a loop of ileum contained in the sac, at a point where long-continued pressure had reduced its caliber to almost nothing.

Examination of Typhoid Stools.—RICHARDSON (*The Jour. Amer. Med. Assn.*, July 3, 1897) finds that the examination of the stools of typhoid patients has a value in diagnosis only second to that of the serum test. In 13 cases of active typhoid he was able, by using a new agar medium, to isolate typhoid bacilli in 10 instances, while of 29 non-typhoid individuals whose stools were examined not one showed the presence of bacilli. All of the cases in which bacilli were found gave a positive serum reaction at least two days before the bacilli were found in the stools, so that the test is decidedly inferior to that with serum, though it has a value as a confirmatory test, especially in doubtful cases. It was also found that although the organisms rapidly diminish with beginning convalescence, they do not entirely disappear for several weeks, a point of importance in connection with disinfection.

The agar preparation used, and which was found to give great satisfaction, was that recommended by Cappaldi, which contains enough chlorid of potash to prevent the growth of many forms of bacteria. The appearance of the coli colonies and those of typhoid, are so different that it is much easier to tell them apart than has been the case on the culture media heretofore employed.

THERAPEUTIC NOTES.

Treatment of Inoperable Cancer of the Uterus.—ROBINSON (*North Carolina Med. Jour.*, July 5, 1897) treated two patients suffering from advanced cancer of the uterus in the following manner, with good results: Through an abdominal incision the uterine and broad ligaments were divided to relieve the pain which their tension caused. The ovarian and uterine arteries were ligated. By means

of a long needle alcohol was injected per vaginam into the indurated tissues about the uterus, every third or fourth day, at first 30 minims, and then an increased amount up to 100 minims. The injections were rather painful, and were followed by a flushed feeling. After two-months' treatment there was a cessation of all discharge and odor, in one case, while the pain was abolished, irritability of the bladder was much reduced, and the general condition of the patient was greatly improved. There was a marked diminution of the indurated area. In the other case, a septic condition existed at the beginning of treatment, and could not be relieved until two doses of antistreptococcic serum were administered. The local results in this case were similar to those in the less advanced one, but the time is yet too short to say whether the good effects of the injections can be maintained.

In *Der Frauenarzt*, May, 1897, CZEMPIN describes a method of treatment of inoperable cancer of the uterus by which he has obtained, "in the least favorable case, an absence for a year of all symptoms of cancer." In other cases the results were more lasting, and one woman has been kept in good health for more than four years, the treatment being twice carried out during that time. After a thorough curetting of the affected portions, the whole diseased surface is thoroughly gone over with a red hot iron, so that a hard crust is everywhere formed. If there is any tendency to hemorrhage, the iron is heated hotter, and held close to the bleeding point without touching it, in this way cooking the tissues and at once stopping the bleeding. Two or three yards of a two-inch strip of iodoform gauze is saturated with a solution of the sesquichlorid of iron, squeezed dry and packed into the uterine cavity. This is removed after three days, and daily irrigations of lysol are made. After a week or more the cauterized slough comes away, and a mass of zinc paste, corresponding in size to the cavity of the uterus, is put on a strip of gauze a yard long and placed in the cavity. The formula is:

R Chlorate of zinc . . .	3 vi, gr. xv
Starch . . .	3 liiss
Gum tragacanth . . .	q. s.

The gauze and paste are to be removed *in toto* after five hours at the latest. The pain is often severe, requiring the administration of morphin. If carefully applied there is little danger from hemorrhage; but at the time that the slough is loosening the tags of slough still containing much of the zinc may come in contact with the fresh granulating surface, and so cause bleeding. On this account, it is well to supervise the sloughing, and to cut away the loosened portions from day to day. The scar formed is a firm one, and pain and discharge are banished for months, or even for years, as said above. Czempin has tried alcohol injections, but with only temporary benefit.

Pirogof and Anesthesia.—The recent erection of a statue to the great Russian anatomist and surgeon Pirogof recalls the fact that the first operation performed under ether in Russia was done by him.

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SATURDAY, AUGUST 28, 1897.

THE BRITISH MEDICAL ASSOCIATION.

THE sixty-fifth annual meeting of the British Medical Association will be held in Montreal, beginning August 31st and continuing four days. Great fears have been entertained in some quarters that the American members of the profession would not be especially welcome at this meeting. It is natural that American physicians should desire more intimate acquaintance with their brethren of the British Isles, and this meeting seemed to present a convenient opportunity for seeing their faces, hearing their voices, and pressing their hands in cordial fellowship. The present indications are, however, that the American physicians will be quite as much in evidence as the members of the Association, and there is some apprehension lest the many invited guests from the States will be largely entertained by the familiar voices and ideas of their own countrymen. The complete official program, however, may change present indications somewhat.

The preliminary announcement, which appears in another column, gives assurance of a most interesting meeting and guarantees an expression of opinion by representative men in each department of medicine.

This is the first time in the history of the Association that it has held a meeting in any of the colonies. Canada naturally feels greatly complimented, and the local profession of our honored neighbor is leaving no stone unturned in a united effort to render this a most interesting, instructive, and delightful occasion. The readers of THE MEDICAL NEWS will await with interest the condensed report of this meeting which will appear in the succeeding numbers.

IMPERFECTIONS OF KOCH'S NEW TUBERCULIN.

No principle of medical science is accorded more general acceptance to-day than that of serotherapy. Every experiment in this line of work but adds confirmation to the general opinion regarding it. At the same time there has grown up in the minds not only of the general practitioner but also of the laboratory expert a true scientific skepticism, which insists that every new discovery shall be subjected to the crucible of personal investigation. Fortunately there are many well-equipped and widely scattered laboratories where these tests can be applied free from personal bias or prejudice.

While these conditions prevail we are free from the danger of premature announcements of important discoveries; indeed, the prompt dissemination of these various laboratory experiments enables the valuable and enduring parts of a discovery to be carefully sifted from the non-essential, and sources of error to be eliminated. In another column will be found an article of Drs. Trudeau and Baldwin, of Saranac Lake, N. Y., giving the results of their careful investigation of Koch's new tuberculin. They point out that the first requirement of an injection fluid is that it be entirely free from danger, and, without affirming or denying the possibilities that may arise from the use of "T. R." tuberculin containing tubercle bacilli, they have discovered that as a matter of fact the new preparation is not absolutely free from these organisms.

This is a most important discovery and suggests the imperative necessity of improved methods in the process of manufacture. An immunizing fluid, or a test fluid designed to indicate the presence or absence of disease in a suspected case, above all things should be free from the suspicion of conveying disease, either the one against which immunity is

sought, or any other. And the danger of primarily inoculating with a virulent germ a patient in whom there has been a mistaken diagnosis "must give us pause." *Non nocere!* is the primal law of therapeutics, and in its execution the strictest conservatism must prevail.

This investigation into the quality of tuberculin and the inaccuracy of its preparation by the manufacturers is along the same line of enquiry that was conducted last year by THE MEDICAL NEWS into the quality of diphtheria antitoxic serum. It is with no little pride therefore that THE MEDICAL NEWS is now the first to present through Drs. Trudeau and Baldwin this discovery of a vital error in the manufacture of the improved tuberculin and at the same time present a method of correcting it.

Koch's claim of having solved the problem of producing artificial immunity against tuberculosis by a liquid containing soluble substances obtained from the dried and crushed bodies of virulent tubercle bacilli is such a logical departure in this line of research work, and the subject is of such overwhelming interest that it is to be hoped careful experiments on animals by others may soon confirm the correctness of his views. Meanwhile it is greatly to be regretted if on account of the many technical difficulties to be overcome in the manufacture of the new "T.R." tuberculin a general test, in the human subject, of the therapeutic value of the remedy in the treatment of tuberculosis may be somewhat delayed. There can be but little doubt, however, that these difficulties will eventually be overcome.

ECHOES AND NEWS.

Typhus Fever in Liverpool During 1896.—During the year 1896 there were 305 cases of typhus fever, with thirty-six deaths, in Liverpool, Eng.

Appropriation for the Philadelphia Polyclinic Hospital.—An appropriation of \$25,000 has been granted by the State of Pennsylvania for the maintenance of the Philadelphia Polyclinic Hospital.

Dr. Sanarelli Honored.—The legislature of Uruguay has conferred honorary citizenship and the sum of \$10,000 upon Dr. Sanarelli in recognition of his discovery of the bacillus of yellow fever.

Kneipp Cure at Mamaroneck, N. Y.—A large tract of land has been purchased at Mamaroneck, N. Y., upon which a Kneipp-cure institute will be established. The main building will be about 400 feet long.

A Sanatorium in a Desert.—A sanatorium for rheumatic and lung patients has been established at Heluan, Egypt, sixteen miles from Cairo with which it is connected by railroad. The air is said to be of unrivaled purity and dryness.

The Babies of Paris.—It is said that a resolution has been submitted to the Municipal Council of Paris requiring families to furnish every two months a medical certificate stating that infants under one year have been cared for in accordance with hygienic rules.

X-Rays in a Murder Case.—A man recently died in Elmira, N. Y., presumably as a result of a bullet-wound of the head. The attorney of the man who shot him now contends that death was due to the effects of the X-ray which was used to locate the bullet.

The Oldest Doctor.—In the issue of THE MEDICAL NEWS of the 14th inst. reference was made to Dr. Stephen Adams of West Newfield, Mass., as the oldest physician in the United States. A correspondent writes us that Dr. Adams lives at West Newfield, Maine.

Swiss Sanatorium Burned.—It is reported from Baden, a canton of Aargau, on the Limmat, the locality of the famous hot mineral springs, that a great fire almost destroyed the Neue Kuranstalt Baden, or Grand Hotel. There was a panic among the guests, and two lives were lost.

Professor Lincoln Injured.—Professor Lincoln of the University of the State of Wisconsin was badly injured on the 13th inst. by an explosion which occurred while he was conducting some experiments in the chemical laboratory. He was unconscious for some hours after the accident, but is now recovering.

Pill-takers of the World.—It is estimated from stamp duties paid by patent-medicine makers in Great Britain that 4,000,000 pills are consumed weekly in that kingdom. France takes only half that number, and Russia only 1,000,000 a week. The Australians are said to be the greatest pill-takers in the world.

Apoplexy in the Surf.—J. Sergeant Price, a well-known lawyer of Philadelphia and president of the Law Alumni Association of the University of Pennsylvania, died at Cape May, N. J., on the 16th inst. from apoplexy and exhaustion caused by struggling in the surf while bathing. Mr. Price was sixty-five years of age.

Negro Women as Nurses.—An association has been incorporated in Columbia, S. C., for the maintenance of a hospital and training school for nurses for the purpose of educating a limited number of colored women as skilled nurses. It is said that Southern hospitals where negro patients are admitted will be glad to have negro nurses.

Expelled from the British Medical Association.—At its recent meeting in London, the British Medical Association expelled two of its members for having accepted offices under the Government of South Australia in the General Hospital of Adelaide, which was vacated by the whole staff as a protest against the conduct of the government.

Medicine for the Mind.—In a book which has just been published in Paris, the author discusses the treatment of laziness, grief, anger, etc., which he considers mental affections. He devotes an entire chapter to love, which he declares to be a human malady whose symptoms resemble wonderfully those of alcoholism and morphinomania.

Medical Responsibility.—A French surgeon was recently condemned to two-months' imprisonment and a fine of 500 francs because of the death of a patient upon whom he had done a laparotomy for the removal of a fibroid tumor, and in whom a pair of forgotten forceps was found *post-mortem*. He entered an appeal, with the result that his imprisonment was increased to three months.

Pennsylvania and Maryland Union Medical Association.—The twentieth annual reunion of this association was held at Highland Park, York, Pa., on Thursday, August 26, 1897. The program consisted of a dinner, followed by a "flow of soul," under the direction of Dr. Joseph Price of Philadelphia, President of the Association, and a business meeting for the election of officers.

The Plague and the Black Death.—It is reported that Dr. Yersin, the eminent Swiss scientist and pupil of Pasteur, declares his conviction that the plague which has been raging in Southern China since 1894 and in British India since 1896, is identical with the black death of the middle ages. He also expresses the opinion that it will, in all probability, reach Europe within a year or two.

The Feather Duster a Breeder of Disease.—According to a well-known scientist, the dusting of rooms is perilous to the members of the household in that it disseminates disease germs, which have a decided affinity for dust particles and adhere closely to them. Household furniture should be wiped with a soft cloth, the dust being carefully retained in its folds. The cloth (or cloths) should be thoroughly boiled daily.

The Prince of Wales and the College of Physicians.—His Royal Highness, the Prince of Wales, on being admitted to the Honorary Fellowship of the Royal College of Physicians of London, was presented with a diploma on vellum, illuminated with the college arms, contained in a case of red morocco, and with a gold-headed cane having a vinaigrette in the head to ward off infection, after the fashion of those formerly carried by physicians.

Death Caused by Cancer-Cure.—A young woman died recently in England from arsenical poisoning caused by a plaster, the active ingredient of which was arsenic, which was applied in order to cure cancer. The epidermis was first removed by a blister, the plaster applied, and the patient told to wear it for fourteen days. The quack who applied the plaster was indicted for manslaughter, but was acquitted because he was able to prove that the woman wore the plaster twenty-one days.

Marine Hospital Service.—Dr. Joseph J. Kinyoun, Passed Assistant Surgeon, U. S. Marine Hospital Service, has been appointed by the Secretary of the Treasury to represent this government at the international exposition on

hygiene and sanitary service on shipboard, to be held in Brussels in September. He has also been instructed to visit the several bacteriologic laboratories on the Continent for the purpose of obtaining information as to recent advances in the investigation of contagious diseases.

An Unrequited Benefactor.—It is said that Dr. H. R. Silvester, whose discovery of a method of restoring persons after apparent cessation of respiration has saved many hundreds of lives, has received no adequate personal reward or distinction for the great benefit he rendered humanity. The only recognition which Dr. Silvester has received is the presentation of the Fothergill medallion awarded him by the Royal Humane Society, which, although a high honor, is not distinction enough for the important services rendered.

Healthfulness of Laughter.—An English scientist, Dr. H. Campbell, has written an essay dealing with the physiologic effect of laughter. When we laugh, he says, we increase the play of the tension of the lungs, and that one result of this increased tension is to arrest the blood-flow in the lungs and thus induce the taking of deep inspirations. These latter are healthful processes, for many parts of the lung are not called into active use during ordinary breathing. Hence, laughter is an exercise and a good one.

The Atlanta Medical and Surgical Journal's Opinion of Osteopathy.—"Osteopathy is the veriest nonsense and quackery that has disgraced an age already rich in many species of medical humbuggery. It is fit associate for Christian science and orificial surgery. The so-called philosophy upon which these three miserable fakes base their existence is words, words, words, full of sound and fury, signifying nothing. One wonders where the boasted enlightenment of the Victorian era can be when osteopaths, Christian scientists, divine-healers, faith-curists, and other voodooes can find willing victims."

Health Reports.—According to the report of the Supervising Surgeon-General of the United States Marine Hospital Service for the week ending August 14th, there were 16 deaths from smallpox at Barcelona, Spain, and 12 at Pernambuco, Brazil; 10 cases with one death at Nagasaki, Japan; 9 cases with 2 deaths at St. Petersburg, Russia. There were 96 deaths from cholera at Calcutta, India, and 15 at Bombay. Yellow fever is still raging in Cuba, there being 16 deaths from this disease at Cienfuegos, 17 at Santiago, 6 at Matanzas; 13 cases with 5 deaths are also reported at Panama, U. S. of Colombia.

Insanity in State Prisons.—The State Prison Commission has made a demand on all the penitentiaries of the State of New York for a report giving the number of convicts therein confined; the number employed; the number idle; their hours of employment; the several kinds of employment; the condition of the prisoners compared with that of a year ago, and the number of cases of insanity which have developed since January 1st, 1897. This action is taken in consequence of the large number of cases of insanity which have developed on account of idleness, in the Kings County penitentiary.

Hot Weather and Crime.—Officers of the Weather Bureau at Washington are conducting an investigation in regard to the connection between atmospheric conditions and crime. Dr. Willis L. Moore, chief of the bureau, who is a physician as well as a meteorologist, says that during the months of January, February, and March, 1200 suicides were reported in the United States, while in July, August, and September, there were 1600. During the cold period there were 1700 murders and 2500 during the three hot months. There were 50 persons hanged or lynched during the three cold months, and 113 hanged or lynched in the three hot months.

A Case of Cæsarean Section.—The Cæsarean operation was performed on August 19th, at the New York Maternity Hospital, Blackwell's Island, by Dr. J. Clifton Edgar, upon a colored woman, the subject of a generally contracted rachitic pelvis, with spinal curvature. Height of patient 4 feet 8½ inches. The indication for the operation was looked upon as an *absolute* one by the attending surgeons who examined the case, as the true conjugate of the pelvis, measured manually and instrumentally with the Farabœuf pelvimeter, the patient being under chloroform, was found to be 2¾ inches. The patient was in her thirty-eighth week of pregnancy and not in labor at the time of operation. Rapid bimanual dilatation of the os was performed as a preliminary and precautionary measure to secure thorough subsequent drainage. The operation occupied forty minutes and a living female child, weighing five pounds, 17½ inches long, and with a biparietal diameter of 3½ inches, was readily extracted. Nine days after operation mother and child are in excellent condition, the mother nursing her child. Highest temperature of patient during this period 100.4° F.

Delegates to the Congress at Moscow.—The Congress convened at Moscow on the 17th inst., and was in session four days. The scientific exercises have therefore been completed and the junketing expeditions are now at their height. Reports of the experiences of "distinguished American physicians" *en route* for Moscow have come from various parts of Europe. Those whose breasts are inspired with a warlike spirit have visited the gory battlefields of Greece, where retreat was so rapid that no saber or bayonet thrusts were received, and the principal wounds to be inspected were made by spent balls and fragments of remotely bursting shells as described in Dr. George R. Fowler's letter from Athens, which appeared in last week's issue. Those of a more bibulous tendency are reported as consuming fabulous quantities of *pure water* at the various spas. One party, among them Drs. N. Senn, D. R. Brower, and L. Waite of Chicago; F. M. Lloyd, New York; Professor G. R. Fowler, Brooklyn; Drs. W. H. Forwood, U. S. A., Washington, D. C., and W. F. Southard of San Francisco, have recently, it is reported, visited the Hunyadi Janos Springs (Saxlehner) at Budapest for the purpose of inspecting the plant and the methods employed in drawing and bottling this well-known medicinal water. While the worshipers of royalty have been kissing the hand of the Czar in the Peterhof Palace.

The Hospital Reform Association.—The first annual meeting of this association was held in London on the 26th ult., and the question of how to remedy hospital abuse was discussed. It was suggested that the British Medical Association was the proper body to take up the question, as it had both the money and ability to do so. It was decided, however, that the British Medical Association could not do anything in the matter unless its action could be sustained by a great majority, and that in any event nothing could be done this year owing to the matter having been referred to the Branches. Another speaker said that a solution of the difficulties of hospital abuse rested on an effectual cooperation between the hospitals, the general practitioners, and charity organizations. The formation of a Central Hospital Board was strongly advocated. A third speaker urged the abolition of the letter system, and the establishment of a system of hospital consultations in properly selected cases. Only cases selected by a practitioner should be admissible for treatment in the casualty department. The consensus of opinion was to this effect, and all were agreed that previous efforts to remedy the evil had failed because of lack of cooperation of the general practitioner. The system of giving death certificates in the out-patient departments of hospitals was also condemned.—*Brit. Med. Journ.*, July 31st.

OBITUARY.

RESOLUTIONS UPON THE DEATH OF DR. LOVE.

DRAFT OF A MINUTE ADOPTED AT THE MEETING OF THE VISITING STAFF OF THE MOUNTAIN SIDE HOSPITAL, AUGUST 16, 1897, IN REFERENCE TO THE DEATH OF DR. JOHN J. H. LOVE, MONTCLAIR, N. J.

No words can express the loss which the Mountain Side Hospital has sustained in the death of Dr. Love, or is it possible to so construe language as to give the measure of our personal loss in the death of our beloved leader.

Filled with the courage and self-sacrifice which are born of high purpose and unselfish broad-mindedness, and always willing to prefer the well-being of others to his own, he gave freely of his time and substance to the hospital.

Its good name was as dear to him as his personal honor, and from his clear and comprehensive mind came most of the suggestions by the adoption of which the enterprise has been successfully carried on. Without Dr. Love it would have failed; with him it has achieved an enviable measure of success and usefulness.

We can no longer enjoy his friendship, his guidance, his counsel, or his sympathy, but we have the brilliant example of his noble life, and of his devotion to the best interests of this hospital.

[Signed]

RICHARD C. NEWTON,
E. M. WARD,
H. B. WHITEHORNE,
Committee.

ANNOUNCEMENT.

PRELIMINARY PROGRAM OF THE BRITISH MEDICAL ASSOCIATION.

Sixty-fifth Annual Meeting, to be Held at Montreal, August 31st to September 4th.

THE adjourned meeting of the British Medical Association will be held at Montreal on Tuesday, Wednesday, Thursday, and Friday, August 31st, September 1st, 2d, and 3d, 1897. President, HENRY BARNES, M.D., F.R.S.E., Senior Physician to the Cumberland Infirmary, Carlisle; president-elect, T. G. RODDICK, M.D., Professor of Surgery in McGill University, Montreal. An Address in Medicine will be delivered by W. Osler, M.D., F.R.C.P., Professor of Medicine in the Johns Hopkins University, Baltimore. An Address in Surgery by William Mitchell Banks, F.R.C.S., Surgeon to the Liverpool Royal Infirmary. An Address in Public Medicine by Herman M. Biggs, M.D., Director of the Bacteriologic Laboratory of the Health Department, New York City.

The scientific business of the meeting will be conducted in eleven sections, as follows:

MEDICINE.

President, STEPHEN MACKENZIE, M.D., London.

The following discussions will take place:

1. "The Dietetic Treatment of Diabetes," to be opened by Dr. Robert Saundby, Birmingham.

2. "Arthritis Deformans (Rheumatoid Arthritis); More Especially Its Relation to Rheumatism, Nervous Disease, and Tuberculosis," to be opened by Dr. James Stewart, Montreal.

3. "Cholelithiasis; Its Causation, Symptomatology, Diagnosis, and Treatment," to be opened by Dr. William Hunter, London, and Dr. Graham, Toronto.

The following, among others, are expected to take part in the discussions in this Section: Drs. Reginald Fitz, Boston; Jacobi, New York; Musser, Philadelphia; Pepper, Philadelphia; F. C. Shattuck, Boston; E. L. Trudeau, Saranac Lake, N. Y.; Jas. Tyson, Philadelphia; W. Wyman, Marine Hospital Service, Washington; R. L. Bowles, London; Mr. Wm. Armstrong, Buxton; Dr. Sidney Coupland, London; Professor Osler, Baltimore; Drs. S. Moncton Copeman, London; H. Handford, Nottingham; J. A. Myrtle, Harrogate; Graham, Toronto; R. Shingleton Smith, Bristol.

PAPERS.

[The list of papers is too long to be inserted here.]

SURGERY.

President, CHRISTOPHER HEATH, F.R.C.S., London. The President will give a short introductory address.

A discussion will take place upon "The Surgical Treatment of Appendicitis," which will be opened by Dr. G. E. Armstrong, Montreal. Dr. J. Ward Cousins, Southsea; Professor C. B. Ball, Dublin; Mr. Jordan Lloyd, Birmingham, will take part in the discussion.

A discussion will also take place upon the "Treatment of Cancer of the Rectum by Kraske's Operation," to be opened by Dr. James Bell.

Among those who will take part in the discussions in this Section are: Drs. W. W. Keen, Philadelphia; Collins Warren, Boston; John Ashhurst, Philadelphia; Cheever, Boston; Dennis, New York; Murphy, Chicago; McGraw, Detroit; J. C. White, Boston; Wm. T. Bull, New York; Professor C. B. Bull, Dublin; Mr. Jordan Lloyd, Birmingham.

[The list of papers omitted.]

PUBLIC MEDICINE.

President, E. P. LACHAPPELLE, M.D., Montreal.

The President will give an address on "Sanitation in Canada; Its Progress up to Date.

Dr. J. R. Kaye, M. O. H. to the West Riding of the County of Yorkshire, will read a paper on "The Relationship of the Health Officer to the Registration and Certification of Deaths."

Drs. F. Montizambert, Superintendent of the Canadian Quarantine Service, Grouse Isle, Quebec, and W. Wyman, Superintendent of the Quarantine and Marine Hospital Service, Washington, will open a discussion on the "Utility of Quarantines as Now Conducted (Inspection, Disinfection, and Isolation Stations)."

Drs. P. H. Bryce, Secretary of the Provincial Board of Health, Ontario; C. O. Probst, Secretary State Board of Health, Ohio; and H. Handford, M. O. H. to the County of Nottingham, will open a discussion on "How Far Should Mandatory Measures Go in Dealing with (a) Measles, (b) Whooping-cough, (c) Tuberculosis, (d) Leprosy?"

Drs. R. F. Ruttan, Chemist to the Board of Health of the Province of Quebec; G. W. Fuller, Louisville, Ky., and J. J. Mackenzie, Bacteriologist Provincial Board of Health of Ontario, will open a discussion on "The Respective Value of Chemic and Bacteriologic Methods of Water Analysis."

[The list of papers omitted.]

OBSTETRICS AND GYNECOLOGY.

President, WILLIAM JAPP SINCLAIR, M.D., Manchester.

The following discussions will be held in this Section on the days indicated:

September 1st.—"The Causation and Treatment of Hyperemesis Gravidarum."

September 2d.—"The Vaginal *versus* the Abdominal Route in Dealing with Inflammatory Conditions and Tumors in the Pelvis." To be opened by Mr. Lawson Tait.

September 3d.—"The Palliative and Radical Treatment of Uterine Flexions and Displacements." To be opened by Dr. Barton Cooke Hirst, Philadelphia.

[The list of papers omitted.]

PHARMACOLOGY AND THERAPEUTICS.

President, D. J. LEECH, M.D., Montreal.

The President will deliver a short introductory address.

Discussions on the treatment of insomnia, the treatment of syphilis, and diuretics will be held on September 1st, 2d, and 3d, respectively.

1. "The Treatment of Insomnia" will be opened by

Dr. C. K. Clarke, Physician to the Rockwood Hospital, Kingston, on general treatment; by Dr. R. W. Wilcox, Professor of Medicine and Therapeutics in the New York Post-Graduate School, on the value of individual drugs, with special reference to the newer hypnotics; by Dr. McPhedran, on the ill effects of and contraindications to the use of drugs; and by Dr. R. Ferguson, Lecturer on Therapeutics in the Western University, on the mode of action of hypnotics.

2. "The Treatment of Syphilis" will be opened by Dr. Whitla, Belfast. The introducer will deal with questions under the following heads: (a) How mercury and iodids are supposed to act in syphilis; (b) when should mercurial treatment be started, especially should it be given in the primary stages? (c) the various methods for its routine administration, dosage, etc., and the length of time necessary for mercurial treatment; (d) the treatment of tertiary and congenital syphilis.

(Hypodermic and intravenous medication will be dealt with by a dermatologist.)

The question of "Diuretics" will be opened from the clinical side by Dr. Barr, Liverpool, and from the experimental by Mr. Marshall, Cambridge.

[The list of papers omitted.]

PATHOLOGY AND BACTERIOLOGY.

President, WATSON CHEYNE, F.R.C.S., F.R.S., London.

The following will be the subjects for discussion:

1. "Serum Diagnosis and the Agglutinating Action of Serums," to be introduced by Professor Wyatt Johnston, Montreal.

2. "Immunization."

3. "The Bubonic Plague."

Among those who will take part in the discussions will be Professors Welch, Johns Hopkins; Crookshank, London; W. Hunter, London; Drs. A. S. Grünbaum, Liverpool; A. C. Abbott, Philadelphia; T. M. Cheesman, New York; R. Fitz, Boston; E. Hodenpyl, New York; Trudeau, Saranac, and F. F. Westbrook, Minneapolis.

[The list of papers omitted.]

PSYCHOLOGY.

President, R. M. BUCKE, M.D., London, Ontario.

The officers of this Section, believing that many of the papers already offered will be provocative of considerable debate, have determined to announce no special subjects for discussion.

PAPERS.

Bruce-Smith, Dr. R. W., Physician to Asylum for Insane, Hamilton, Ontario. Title of paper not received.

Brush, Dr. E. N. Title of paper not received.

Bucke, R. M., M.D., London (Ontario) Asylum. "On Mental Evolution."

Clark, W., M.D., Toronto Asylum. "The Reflexes in Psychiatry."

Crothers, Dr. J. D., Hartford, Conn. "Some New Phases of Inebriety in Clinical Studies."

Gooding, Dr. W. W., Washington. Title of paper not received.

Hobbs, —, M.D., London (Ontario) Asylum. "Surgical Gynecology in Insanity."

Rogers, Dr., Asylum for Feeble-Minded, Faribault, Minn. "Cases of Mongolian Idiocy."

Rohe, G. H., M.D., Maryland Hospital for Insane, Catonsville. "The Etiological Relation of Pelvic Disease to Insanity in Women."

Russell, J., M.D., Hamilton (Ontario) Asylum. "Insanity in its Relation to the State."

Stearns, Dr. H. P., Retreat for Insane, Hartford, Conn. "Heredity as a Factor in Etiology of Insanity."

Villeneuve, George, M.D., Longue Pointe. "The Proof of Insanity in Criminal Cases."

Wise, Dr. P. M., Albany. Title of paper not received.

OPHTHALMOLOGY.

President, EDWARD NETTLESHIP, F.R.C.S., London.

The following subjects have been chosen for discussion:

1. "Heterophoria; the Indications for and Limitations of Its Operative and Non-Operative Treatment." In connection with this subject, Dr. F. Buller, Montreal, will read a paper on "Abnormalities in the Functions of the Extrinsic Ocular Muscles."

2. "How Far Can Accurate Color Vision be Relied upon to Prevent Accidents on Railways and at Sea." In connection with this subject, Mr. T. H. Bickerton, Liverpool, will read a paper on "The Question of Color Vision in the Mercantile Marine."

3. "Antiseptics in Eye Surgery."

4. (If opportunity occurs) "On the Prevention of Accidents to the Eyes of Persons Engaged in Industrial Employments."

[The list of papers omitted.]

LARYNGOLOGY AND OTOTOLOGY.

President, GREVILLE MACDONALD, M.D., London.

The following discussions will take place: (1) "On Turbinotomy," to be opened by the President. (2) "On the Ultimate Results of Operations on the Mastoid in Suppurative Ear Disease. (3) "On the Significance of Laryngeal Paralysis.

Among those who intend to take part in the business of the Section are Drs. J. Solis-Cohen, Philadelphia; Birkett, Montreal; Chretien, Montreal; G. R. McDonagh, Toronto; D. B. Delavan, New York; Charles Warden, Birmingham, and J. W. Mackenzie, Baltimore.

[The list of papers omitted.]

ANATOMY AND PHYSIOLOGY.

President, AUGUSTUS D. WALLER, M.D., F.R.S., London.

The following have been selected as subjects for the discussions:

September 1st—"Anesthetics," to be introduced by the President of the Section (Dr. A. Waller). Among those who are expected to take part in this discussion are Drs. Shore, Cambridge; Kemp, F.R.S., Baltimore; Professor W. D. Halliburton, F.R.S., London; Drs. A. B. Macallum, Toronto; H. A. Hare, Philadelphia; G. T. Kemp, Baltimore; G. Gordon Campbell, Montreal; Kenneth Cameron, Montreal, and Richet, Paris.

September 2d—"The Best Methods of Teaching Anatomy," to be introduced by Professor Alex. Macalister, Cambridge, and Dr. F. J. Shepherd, Montreal.

September 3d—"The Causation of the Heart-beat and its Modifications," introduced by Dr. Gaskell, F.R.S., Cambridge, and Professor T. Wesley Mills, Montreal. Drs. Porter, Boston; Howell, Baltimore; Bowditch, Boston; W. Townsend Porter, Boston; A. B. Macallum, Toronto; T. Wesley Mills, Montreal; G. Car Huber, Ann Arbor, Mich., and A. P. Knight, Kingston, are expected to take part in the discussion.

[The list of papers omitted.]

Dr. Gustav Mann will send for exhibition specimens illustrating the "Minute Histology of the Liver in Active and Resting Conditions." Dr. D. A. Welsh, Edinburgh, will exhibit specimens illustrating the "Histology of the Parathyroid Glands." Dr. George Oliver will exhibit his new hemoglobinometer and hemocytometer. Drs. Leonard Hill and Barnard will exhibit a new and accurate form of sphygmometer.

DERMATOLOGY.

President, MALCOLM MORRIS, F.R.C.S.Ed., London.

A subject selected for discussion in this Section is the "Clinical and Pathological Characteristics of Vesicular Skin Diseases, Especially the Dermatitis Herpetiformis Group."

It is intended that a joint meeting should be held with the Section of Pharmacology and Therapeutics for the discussion of the subject of the "Treatment of Syphilis."

[The list of papers omitted.]

Among those who are expected to take part in the discussions of this Section are: Drs. E. B. Bronson, New York; L. D. Bulkeley, New York; J. A. Fordyce, New York; J. N. Hyde, Chicago; G. T. Jackson, New York; Stephen Mackenzie, London; A. Eddowes, London, and White, Boston.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE PENDING "CRUSADE" OF THE ANTIVACCINATION SOCIETIES—IMPROVEMENTS AT THE JEFFERSON MEDICAL COLLEGE HOSPITAL—A PSYCHOLOGICAL PUZZLE—OBSTRUCTIONS TO THE ENFORCEMENT OF THE BAKE-SHOP LAW—PROFESSORS OF THE UNIVERSITY OF PENNSYLVANIA HONORED—DR. JOHN B. DEEVER—VITAL STATISTICS FOR THE WEEK ENDING AUGUST 21ST.

PHILADELPHIA, August 21, 1897.

FROM events of the past three months it would seem that the opponents of vaccination in this city and State contemplate instituting what they are pleased to term a "vigorous crusade" against this valuable preventive measure, the movement being scheduled to begin, in all probability, within the next two or three weeks, when the vaccination by the municipal health board of all unvaccinated children seeking admittance to the public schools, as provided for by law, will furnish these amusing agitators an occasion for the ventilation of their grievances.

The organized opponents of vaccination in Philadelphia

have until very recently maintained such a tranquil condition of innocuous lethargy that the average citizen was unaware of their existence; but the meetings here during the early part of the summer of the National Antivaccination Society, in conjunction with the Pennsylvania Anticompulsory Vaccination League, and a number of other "antis" with high-sounding names and local origin have called attention to their doings, and have even stirred up the deluded members of these bodies themselves toward accomplishing something less ephemeral than the issuance of *pronunciamentos* condemnatory of the principle of Jenner and of its general application. So the several societies concerned, backed by a national fund which is reported to amount to \$50,000, propose to test the constitutionality of the compulsory vaccination law, as it applies to the pupils of public schools, and thus vindicate their beliefs, and incidentally furnish the intelligent public with some amusing reading in the daily prints. The time for taking these legal steps is almost at hand, for in the course of the next few weeks the wholesale vaccination of school applicants will be under way, and will give to the "antis" many excuses and good opportunities for beginning their threatened "crusade."

Of course, in connection with this matter, the peculiar uncertainty of forensic measures and their instability must be considered, and the power of temporary injunction be thought of, but in spite of these loop-holes one can scarcely contemplate seriously a reversal of the present vaccination law, as a result of the agitations, however elaborate, of this body of untutored obstructionists. And so the prevention of smallpox will continue, in spite of tirades, abuses, and law-suits by the contributors to the \$50,000 fund, who naturally are determined to have, in racing parlance, "a run for their money," even if nothing more definite accrues.

The removal of several of the out-patient departments of the Jefferson Medical College Hospital to the new dispensary building adjoining the old hospital marks the beginning of a policy of expansion and improvement, which has long been contemplated by the hospital authorities, but which until the present time has been rendered impossible through lack of funds. For many years the facilities of the institution have been taxed to the utmost in order to properly care for the large and constantly increasing number of patients, so that the present step, which has finally become imperative, has accomplished much in relieving the congestion at the Sansom street hospital, and in furnishing the staff better facilities for both clinical and laboratory work. The present hospital will be torn down, and replaced by a modern ten-story building, erected upon property recently acquired by the trustees; work upon this structure will be commenced in the near future, most probably during the spring of next year. Hand-in-hand with the work of hospital improvement, the construction of new buildings for the medical school will progress, so that it is confidently expected that in the course of two-years' time both hospital and college will possess quarters which will be appropriate to the extent and importance of their work.

One of those curious psychologic puzzles which are so

frequently heralded as "trances" by the daily newspapers is at present attracting a share of the public attention in this city. The subject is a young girl, who, until the beginning of the seizures some six months ago, always enjoyed apparently good health. A few days prior to the commencement of the attacks, the mother of the child noticed that she became listless and apathetic, and refused to take food; she then passed, her parents declare, into a state of what from the descriptions given seems to have been catalepsy lasting for more than two weeks, from which it was impossible to arouse her. Finally she was awakened from the condition, and the mind partially regained its suspended activity, but only temporarily, for the ecstatic condition soon came on again, and has alternated with lucid intervals for the last six months. At present, the girl's condition is said to warrant a grave prognosis.

The wholly unique spectacle of a police magistrate declaring upon the constitutionality of a law has been recently furnished in this city by the decision of one of the city police-court "judges" that the present laws regulating the inspection of bake-shops are unconstitutional, and by the discharge of the defendant, although it was clearly proved that he had broken the law both in letter and spirit. The bake-shop law has been in effect for scarcely three months, but during this short time the beneficial effects of its enforcement have been shown in the radical changes wrought in the sanitary condition of many formerly disease-breeding and filthy bakeries. The law has been literally interpreted by the inspectors, and the committing magistrates, with the exception noted, have not been lax to do their duty in connection with the measure, so that it is sincerely regretted that the present obstruction has arisen, although the decision in question will have no effect whatever upon the work mapped out by the State Factory Inspection, and prosecuted under the advice and instructions of the Attorney-General of the State. Whether a police-justice is empowered to decide the validity of a legal measure passed by the Legislature is a question to be further determined by the proper courts, and this cannot be done too quickly.

Dr. Edgar F. Smith, Professor of Chemistry in the University of Pennsylvania, has been elected one of the vice-presidents of the Association for the Advancement of Science, which met in Detroit during the past week. This society has also honored another member of the University faculty by electing Dr. Lightner Witmer a fellow in anthropology, in recognition of his labors in aiding the advance of this branch of science.

Dr. John B. Deaver sailed for Europe on August 18th, intending to remain abroad for three months. He intends to spend the greater part of this time on the Continent.

The total number of deaths in Philadelphia for the week ending August 21st, was 430, an increase of 24 over those of the preceding week. Of the whole number of deaths 190 were of children under five years of age. There were 22 deaths from diphtheria, and 75 new cases; 3 deaths from scarlet fever, and 49 new cases; 14 deaths from enteric fever, and 58 new cases. There was a decrease of 20 as compared with last week in the total number of cases of contagious diseases reported for this period.

OUR VIENNA LETTER.

[From our Special Correspondent.]

DEATH OF DR. JOHANN LERCH—THE PREVALENCE OF THE ECHINOCOCCUS IN DALMATIA—A MECHANICAL METHOD FOR THE DIFFERENTIATION OF DUHRING'S DISEASE AND PEMPHIGUS—DYSMENORRHEA AND AMENORRHEA TREATED BY MEANS OF EXERCISE—INTEREST IN THE NEUROLOGICAL CONGRESS AT BRUSSELS IN SEPTEMBER.

VIENNA, August 8, 1897.

THE recent death of Dr. Johann Lerch has called forth a number of tributes from the medical press of Vienna to this the last of the distinguished members of the University faculty who took a prominent part in the struggle for constitutional liberty in 1848. Dr. Lerch was then the dean of the medical faculty, and it was at his initiative that the student body was organized, in conjunction with the faculty, into a thoroughly united society, to act as a unit during the troublous times. It was at his suggestion, also, that the students were provided with arms and so enabled to play an effective part in the struggle which finally secured certain popular rights, even if it did not accomplish all that its projectors hoped for. Austria is not the only country whose physicians have been leaders in the cause of popular liberty, and it will be interesting to the profession to realize that, while another of their number who was ready to sacrifice self, fortune, and honor for others is gone, it is only after a long and honored life.

How dangerous unguarded association with dogs may be is illustrated by a recent report of the prevalence of echinococcus disease in Dalmatia, a rather out-of-the-way province of the Austrian Empire, the inhabitants of which are noted for anything but cleanliness. Two physicians report the occurrence of forty-six cases within seven years in the hospital of which they have charge—an extremely large number, considering the rarity of the disease elsewhere. As is the case in Iceland, where, in the graphic words of an English medical visitor, the dogs share the couches of the inhabitants, and the children exchange caresses and echinococci with them in the morning, the prevalence of the echinococci in human beings is attributed to careless handling and playing with dogs, and failure afterward to take the simplest precautions of cleanliness before eating, thus carrying the ova into the digestive tract.

Curiously enough, in this report the cases are about equally divided between men and women, there being twenty-four of the former and twenty-two of the latter. Inquiry at the slaughter-houses in Dalmatia brings out the fact that it is almost the rule to find slaughtered animals affected with the echinococcus, and so the affection passes on from one species to another, while a little sanitary regulation, and attention to personal cleanliness would probably wipe it out. For man, of course, the danger lies entirely in contact with the dog, but it is the inalienable birthright of every human being the world over to own a dog if he so desires. The poorer the individual possessor, and the more worthless the cur, the more inalienable is the right of possession and the more is popular feeling aroused if the right is brought into question.

Meantime, it has become the custom to think that nothing can be done in the matter, and thousands of worthless, absolutely useless, dogs are allowed to wander at large, bearing with them, especially for children, the possibility of a number of infections.

While pemphigus, which our great American dermatologist, Duhring, so ably differentiated some years ago, is very generally acknowledged by the dermatologists of the French school to be a distinct pathologic entity, it has not met with the same ready recognition in Vienna. An article in the *Wiener klinische Wochenschrift* for July 22d, by Dr. Luithlen, would seem to suggest a means by which it may be differentiated from the forms of pemphigus, with which it has usually been confounded here.

When, some years ago, in an exhaustive study of a favorite subject, Professor Neusser demonstrated the presence of eosinophiles in pemphigus blebs, it was thought that they might prove of diagnostic importance in distinguishing forms of the disease, but further study has shown that these cells occur in nearly all chronic skin conditions. Kromayer, a year or more ago, suggested that the fluid secreted by the tissues in pemphigus is of a special character, and has a specific action in separating the epiderm from the underlying cutis. It is in following up this idea that Dr. Luithlen made his observations. If a perfectly healthy bit of skin be excised and exposed to the action of the watery contents of a pemphigus bleb, the maceration which follows causes a separation of the epiderm from the cutis after a very few minutes. If the contents of an ordinary blister, produced by a burn or scald, be used instead of the pemphigus serum, the action is much slower. It may take an hour, even, for the maceration to produce the same effect. The suggestion is that this specific action will serve as a diagnostic criterion for the differentiation of true pemphigus from allied and similar conditions.

In certain of the gynecologic clinics here in Vienna, and also to a certain extent among the best private practitioners, the ordinary treatment for functional dysmenorrhea and amenorrhea in young girls is that embodied in the direction to take a certain amount of regulated exercise. Sometimes the patients are referred to a gymnasium, sometimes to medical institutions where the mode of treatment is gymnasiotherapy. The results are said to be excellent when patients have been leading a sedentary life. Some who have been amenorrheic for months have a return of their menses often within ten or twenty days after the beginning of the treatment. In some patients in whom painful menstruation has existed for years, the first period after beginning to take exercise is almost without pain. The exercises are interrupted during the menstrual period, and of course are not meant to be employed when there is a radical organic lesion or serious pathologic condition present as the cause of the trouble. One is reminded of the oft-reported benefit derived from bicycle riding in America for similar conditions. Here, however, the public has not yet reached the stage where it looks complacently on women bicyclists, and but very few of them are seen on the streets. Even for men the exercise is thought to be too severe by many of the conservative

physicians. The temptation to overdo the exercise, in the case of hitherto sedentary individuals, is too strong, and the fact that a bicyclist only realizes how fatigued he is after he has dismounted from his machine makes conservative practitioners hesitate about recommending it, lest overwork should affect heart or kidneys.

In the midst of the bustle of preparation for the meeting at Moscow, one finds that not all the interest is being absorbed by the International Medical Congress. The first meeting of the International Neurological Congress is to open at Brussels, September 12th, and the nerve specialists look forward with a good deal of interest to its proceedings. One of the principal subjects for discussion is to be general paralysis, and it is more than a coincidence that Professor Krafft-Ebing's discourse at one of the general sessions at the Moscow Congress is to be on the same subject. The etiologic connection between general paralysis and syphilis is now so generally admitted that it is probable that the results of the discussions at each congress will make it one of the universally accepted medical dogmas. Professor Krafft-Ebing's opinion, expressed very forcibly in some of the last clinics of the year, is that syphilis, either in its acquired or hereditary form, is the important causative element in at least ninety per cent. of the cases of general paralysis, and that it is the pathologic changes produced in the central nervous system as a consequence of the syphilitic toxins which lead up to the cerebral atrophy and sclerosis of general paralysis. The subject is an extremely interesting and important one, considering how large a proportion of the inmates of our insane asylums are general paralytics. It is interesting, also, as an index of how important a rôle is now assigned to venereal diseases in the etiology of subsequent nervous affections.

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Tenth Annual Meeting, Held at Niagara Falls, N. Y., August 17, 18, 19 and 20, 1897.

[Specially reported for THE MEDICAL NEWS.]

FIRST DAY—AUGUST 17TH.

(Continued from page 251.)

THE SOURCE OF PUERPERAL SEPSIS

was the title of the next paper, which was read by DR. JOHN MILTON DUFF of Pittsburg.

The essayist said that the exact source in any given case is not always easy to determine; in fact, in many instances, after the most patient and careful search one is unable to find even a probable source. In cases in which the source of infection is determined, however, it generally proves to be one which might have been avoided.

Aseptic midwifery has done much to prevent the occurrence of puerperal sepsis, and, consequently, to lower the rate of mortality following childbirth. An *accoucheur* who attends a patient without observing the strictest possible aseptic and antiseptic precautions is guilty of nothing less than malpractice. Frequently, however, too

great reliance is placed upon the use of antiseptics. A well-known member of the profession said recently in the hearing of the essayist, that he felt perfectly safe in attending a patient in labor after visiting one suffering from erysipelas or diphtheria if he washed his hands thoroughly in a strong solution of mercuric bichlorid prior to entering the lying-in chamber. Such a proceeding the essayist thought most reprehensible.

The speaker then briefly reported the histories of 50 cases of puerperal sepsis which have come under his personal observation, and specified the source of infection, when discovered, in each. In 14 of these cases, the source of infection could not be traced, although 2 were instances of placenta previa. Five of the patients were attended by a midwife, and no aseptic precautions were observed. The source of infection in the remaining 31 cases was as follows: Retained placental tissue, 5; placenta spuria, or succenturiata, 1; attending physician had previously visited a patient ill with erysipelas, 1; putrid fetus, 4; physician had previously dressed an abscess in another patient, 1; laceration of cervix and perineum, 3; putrid blood clots, 2; diphtheria case in same house, 1; acute gonorrhea in husband, 1; protracted labor, due to shoulder presentation, with sloughing of vaginal walls and cervix, 1; retained membranes, 1; tonsillitis in attending physician, 1; physician had previously dressed a case of gangrene of leg, 2; physician had opened suppurating finger, 1; mother of patient had pelvic abscess at time of latter's confinement, both being attended by same nurse, 1; decaying animal matter in cellar of house in which confinement occurred, 1; child of patient's sister had dysentery, 1; physician, a few hours previous to patient's confinement, had curetted a patient for incomplete abortion, 1.

DR. A. GOLDSPOHN of Chicago said: This paper is a most valuable one, as it calls attention to the fact that the principal source of infection in puerperal sepsis is from without, and not necessarily from the unclean surroundings of the patient, as a woman may be confined in a stable by a competent and cleanly attendant without bad results, whereas another may be delivered amid the best surroundings and may develop sepsis if the physician or other attendants do not observe aseptic precautions. The most dangerous form of infection is that by streptococci, but, fortunately, this occurs only in about four per cent. of cases. Infection by the colon bacillus and other micro-organisms is more frequent, but less dangerous. The presence of sewer gas undoubtedly is often an important factor. Many obstetricians advocate giving a vaginal douche before labor, but this should not be done if the attendant has reason to suppose that the vaginal secretions are healthy. Nature has provided a puerperal woman with copious vaginal secretions, and the one per cent. of lactic acid contained in this secretion is sufficient to kill pathologic germs in a great majority of instances. If, for any reason, this secretion is not of a healthy nature previous to labor, a douche of a 1-2000 mercuric bichlorid solution is indicated.

DR. SAMUEL MCMURTRY of Louisville, Ky., said that the number of deaths from puerperal sepsis continued to be so large that the subject should continue to be dis-

cussed in all its bearings until the importance of the possibility of its being prevented should be impressed upon the mind of every practitioner. He agreed with the first speaker that the condition is not a pathologic entity, but is a mixed infection, and should be treated as such. Milk fever, so-called, is a mild degree of sepsis, and its symptoms are liable to be overlooked, and its importance as part of a general pathologic condition underestimated.

DR. C. G. CUMSTON of Boston said that gonorrhea in the female is as difficult to cure as when occurring in the male, and that in the case of a pregnant woman in whom former infection is suspected cultures from the peri-urethral glands should be made in order that this source of sepsis might be eliminated if found to be present. He referred, also, to the numerous cases of puerperal sepsis in which the bacterium coli has been demonstrated in the uterine mucous membrane.

DR. J. F. BALDWIN of Columbus, Ohio, said that the worst cases of puerperal sepsis which had ever come under his observation presented no clinical symptoms whatever in the vagina. In three instances of sepsis during the puerperium the source had been traced to the appendix. These probably were due to the presence of the bacterium coli. The speaker then related the histories of several cases in which every possible precaution against sepsis had been observed, yet the patients died, no cause for infection being ascertainable. He said that the practice of merely dipping the hands into a mercuric bichlorid solution previous to examining a woman in labor was a reprehensible one, and could not be too strongly condemned. Thorough application of soap and hot water, with vigorous and long-continued use of a nail-brush would produce far better results, although thorough soaking of the hands afterward in the bichlorid solution would make assurance doubly sure.

With reference to the paper read by DR. LONGYEAR, the speaker thought a valuable and as yet uninvestigated field had been opened. The possibility of sepsis during the puerperium being due to infection by the Klebs-Löffler bacillus must set every obstetrician to thinking, and the strides taken during the past two years in the serum-therapy of diphtheria made it reasonably certain that by the early use of antitoxin the condition might be easily arrested and cured. If subsequent bacteriologic examination proved the infection to be due to another cause no harm would have been done by the employment of the remedy. He said that Jacobi of New York has claimed that peroxid of hydrogen in full strength is too irritating for application to the throat, and he questioned if the same is not true in the case of the vagina, especially when the canal is inflamed.

DR. POTTER said the recognition of the fact that puerperal sepsis was not an entity, but a complex pathologic condition, had led to the great improvement in methods of treatment which now prevail. While a maternity hospital formerly was looked upon by the laity and general practitioner as the most dangerous place in which a woman could be confined, such an institution now is considered the safest on account of the rigid adherence by the attendants to aseptic principles.

DR. WRIGHT of Toronto agreed with Dr. Baldwin in the importance of the use of hot water, nail-brush, and soap by the obstetrician, and said that at the Burnside Lying-in Hospital, Toronto, he is in the habit of impressing upon the attendants the importance not only of asepsis, but of antiseptics. Printed rules for washing the hands, and for the preparation of catheters and all else to be used in the vicinity of the patient, are posted conspicuously, and are strictly adhered to, but in spite of these precautions cases of sepsis and death have occurred. Two deaths were traced to inconsiderable lacerations of the perineum. Assistants at a confinement are taught to consider the immediate repair of a laceration as of the highest importance. At this hospital, 530 consecutive deliveries have occurred without a death.

DR. EDWIN WALKER of Evansville, Ind., said that the onward progress of midwifery has been in accordance with the progress of aseptic technic. Douching will not clean out an infected uterus, but if the mucous membrane of the cavity is thoroughly dried the habitat of the germs is made unsuitable for their growth. Hirst thinks that in two cases of puerperal sepsis occurring at the University Maternity, Philadelphia, the infection was directly traceable to the employment of intra-uterine douches.

The PRESIDENT said the fact is generally accepted that the causes of puerperal sepsis are: (1) gonorrhea, (2) retained placental tissue or membranes, (3) dirty hands or instruments, (4) laceration of the perineum improperly treated, and (5) intra-abdominal disease or tumors. He cited a case of strangulated dermoid cyst of the ovary as an illustration of the last-named cause. He has met with two cases of hydatid mole of the uterus during the past year. These cases are very difficult to treat, and the patient is peculiarly liable to the development of sepsis. He had seen several cases such as described by Dr. Longyear, in which a grayish membrane was present on the vaginal walls and cervix, but had never been able to determine that such was diphtheritic. He claimed that Dr. O. W. Holmes was wrong in teaching that infection in every case is carried by the physician, as there is no danger to the patient if the physician takes a hot bath, changes his clothing, and observes proper aseptic precautions, even if he has immediately before attended a case of sepsis or performed a major surgical operation. The speaker did not approve of the use of the sharp curette in cases of puerperal endometritis, as the instrument merely defeats the efforts of Nature to build up a limiting wall and exposes a fresh, absorbing surface.

DR. ALBERT VANDER VEER of Albany considered Dr. Longyear's paper one of the most valuable contributions that had ever been made to a proper understanding of the sources and types of puerperal infection. A bacteriologic examination of the vaginal secretions in all cases is of the utmost importance, but it must be carefully carried out in order to avoid the possibility of making a wrong diagnosis. He wished that a copy of Dr. Duff's paper might be sent to eighty per cent. of all the physicians of this country who have been practising more than ten years, as a perusal of it would convince them that in a

vast majority of instances puerperal sepsis is preventable.

DR. GOLDSPOHN said that the gonococcus has been said to be the most frequent cause of puerperal sepsis, but that this view is erroneous, as its presence is a predisposing rather than an exciting factor. No case is on record as having been due primarily to this germ.

In closing the discussion, DR. LONGYEAR said that in puerperal sepsis the important fact to determine is the *type* of micro-organism producing the condition, so that appropriate treatment may be instituted at the earliest possible moment.

The next paper, entitled

PUERPERAL TOXEMIA AND ITS TREATMENT,

was read by DR. ADAM WRIGHT of Toronto. He said that the offending toxins are present in these cases in the blood, liver, and muscles, and that the slightest variation from health during the progress of pregnancy should give rise to suspicion. Albuminuria often is the last symptom to appear, and in many instances does not appear at all. Charpentier and others have recommended an exclusive milk diet in cases of toxemia of pregnancy, but as milk is so distasteful to many patients, and is always constipating, its exclusive use is to be avoided. Such a diet is appropriate for infants and calves, but not for adults. Leo has shown that such a diet in the case of adults is harmful rather than the reverse.

The essayist is in the habit of allowing such patients to use milk, buttermilk, or kumyss, as taste dictated, tea once a day, lemonade, bread and butter, dry toast, arrow-root, rice, vegetables of all sorts, especially greens, and a small amount of potato. Meat is proscribed. Mineral waters of different kinds are often most agreeable to these patients, and are allowed in reasonable quantities. Hot breads and pastry are never allowed.

The routine treatment at the Burnside Hospital, Toronto, when symptoms of toxemia develop is as follows: The urine of the patient is examined, and, whether or not albumin is found, one ounce of Epsom salts is given, which is followed at intervals of a few hours by three doses of the salt of half an ounce each. An enema is then given, and, in some instances, a dose of calomel. This treatment causes the patient to have from eight to fourteen evacuations of the bowels during twenty-four hours. The patient is encouraged to drink large quantities of water, and when the unfavorable symptoms disappear, the administration of salts is discontinued unless at least two stools are obtained daily.

The free exhibition of magnesium sulphate removes noxious elements which otherwise would be absorbed from the intestinal tract, and draws large quantities of serum and its contained toxins from the circulation without disturbing or lessening the blood-globules. It thus aids the blood in getting rid of the poison, and has a beneficial effect upon the kidneys. A woman may be purged in this way during two or even three months prior to confinement without becoming anemic; on the contrary, this treatment will improve the condition of the blood. A daily warm bath should be given, and the kidneys treated only by means of copious administration of water, plain

or mineral. The uterus should not be emptied of its contents until this treatment has been fully and conscientiously carried out.

TREATMENT OF PUERPERAL ENDOMETRITIS BY THE CAROSSA METHOD

was the title of the next paper, which was read by DR. EDWARD J. ILL of Newark, N. J. The essayist said that early in the winter of 1896, a pamphlet, entitled "Eine neue Methode der Behandlung des Kindbetts-fieber mit durchsplagenten Winkung" was published by K. Carossa, which appeared to contain such valuable suggestions in the way of treatment of puerperal endometritis that he resolved to give it a trial. The method consists in irrigating the uterine cavity with alcohol, the cavity being previously packed with gauze in such a way as to admit of the alcohol reaching every part of the surface. A catheter is first introduced to the fundus and gauze is then packed lightly about it. A funnel is attached to the protruding end of the catheter through which a twenty to twenty-five volume per cent. solution of alcohol is poured so as to flow into the gauze. The quantity of the solution used is from 30 to 50 c.cm. every hour, day and night. In from three to six days the gauze is removed.

The originator of this method presented certain claims regarding its efficacy, which the reader was unable to subscribe to. Carossa attributed the good result obtained in his cases to the rapid evaporation of the alcohol. The essayist had made use of the method, slightly modified, with excellent results, and recommended its further trial, especially on account of its simplicity.

DR. GOLDSPOHN said that he could not see that this method differed in any way from that of continuous irrigation. Alcohol is one of the most potent germicides known, and its absorption under the circumstances of which the paper treated, also, its systemic absorption, might possibly prove beneficial. The method is directly at variance with that recommended by Dr. Walker, in which the uterine cavity is kept as dry as possible during the course of puerperal sepsis.

In reply, DR. ILL said that the introduction of such a small amount of alcohol every two hours cannot be regarded as continuous irrigation. The object of the procedure is merely to keep the gauze which is in contact with the surfaces of the uterine cavity constantly saturated with the fluid.

DR. RUFUS B. HALL of Cincinnati then read a paper, entitled

SOME OF THE SEQUELÆ FOLLOWING SUPRAVAGINAL HYSTERECTOMY BY THE BAER METHOD.

He referred to the objections to the extraperitoneal method, and then spoke rather more in detail of total extirpation. He was one of the first to advocate and perform this operation, and had obtained excellent results from it. But it does not meet his ideas of a perfect operation; the final results are good, but there is a primary difficulty which is disagreeable. Suppuration necessarily takes place about the ligatures on the sixth or seventh day, causing a slight rise of temperature. To overcome this he uses specially prepared catgut for the liga-

tures below the peritoneum. He finds catgut unreliable during the other steps of the operation on account of the danger from hemorrhage through slipping of the knots, and so has abandoned its use.

In 1895, after seeing Dr. Kelly of Baltimore perform the supravaginal operation, with his modifications of Baer's technic, Dr. Hall adopted that method. He had operated in this way forty-six times, but was not pleased with the results. Eleven of the patients had post-operative sequelæ, due to the presence of the buried ligatures. All the patients made a good primary recovery, only one showing any signs of trouble earlier than the seventh week. This one had a discharge of pus from the vagina at the end of the fourth week. The discharge disappeared, to return again at intervals of a few days to four or five weeks, and only ceased when the ligatures were removed. The other patients suffered in a similar way, except that they did not experience any trouble from the ligatures until from four to eleven months after the operation. Within a few days after the ligatures were removed, the patients were well, and have remained so, except in two instances. These two, one sixteen and the other eighteen months subsequent to the operation, are still having trouble, as all the ligatures have not come away. He knew the suture material was not at fault as, otherwise, there would have been trouble immediately following the operation. Besides the same material was used in other operations, and no trouble resulted. He believes that a large percentage of the patients so operated upon will certainly experience this trouble. The general surgeons are abandoning the use of silk, silkworm gut, and silver wire in Bassini's operation for this very reason, and it is only logical that the gynecologist in his line of work will have to do the same. The essayist closed his paper by saying that in spite of the fault he has to find with total extirpation, he prefers it to supravaginal hysterectomy as practised by Baer and modified by others. He feels more certain of his final results with the former method.

DR. GEORGE M. HUGHES of Philadelphia then read a paper on

THE SEQUELÆ OF DEAD LIGATURES AND SUTURES.

He advocates the use of small-sized, twisted Chinese silk in all cases of operations on the intestine and appendix, and said that the trouble experienced from the introduction of non-absorbable sutures in nearly every case is due either to imperfect aseptic methods or to the fact that altogether too many sutures are inserted.

DR. CUSHING of Boston said that he has twice given up the use of catgut as a suture material in the abdominal cavity on account of the subsequent formation of of stitch abscesses, but has returned to it as he is convinced the fault lay in the manner the catgut was prepared, or that it became infected during the progress of the operation. He recommends sterilization by formalin, and thinks the strands of the catgut should be kept in separate tubes and only withdrawn when required for use. He claims that in a majority of cases panhysterectomy is preferable to supravaginal amputation, as nothing

whatever is gained by leaving a portion of the cervix *in situ*. The generally accepted idea that the cervix acts as the keystone of an arch is entirely untenable.

DR. LONGYEAR said he was pleased to hear that others condemn the use of non-absorbable ligatures. If animal ligatures are properly prepared, no bad results will follow their use. He had employed kangaroo tendon during the past nine years in all abdominal cases, with most gratifying results, but always prepares it himself.

DR. GOLDSPOHN spoke in favor of the employment of animal ligatures, and laid particular stress upon the method of preparation. He said the formalin method of sterilization is by far the best yet devised. The formalin, under the influence of heat, converts the gelatin contained in the ligature into an insoluble substance, but the ligature must not be exposed for too long a time to its action, as it will become brittle. After sterilization, the ligatures must be washed for twenty-four hours in running water in order to "deformalize" them. As the result of a large series of experiments, he now prepares the ligature material as follows: The best quality of white, German catgut is selected, and without previous soaking in ether is placed for forty-eight hours in a four-per-cent. watery solution of formalin. Then it is put for twenty-four hours in running water, boiled for three-quarters of an hour in absolute alcohol at a temperature of 212° F., or in plain water for fifteen or twenty-minutes, and then put in sterilized retainers. It should be wound upon glass spools in order to prevent swelling and shrinking.

DR. MCMURTRY referred to the relative advantages of supravaginal and panhysterectomy, and said that the ideal method is that one which saves the life of the patient and gives rise to fewest sequelæ. He favors the use of silk for buried sutures and ligatures, and has never seen bad results from its use. If the silk has been properly prepared, the peritoneum will readily take care of it, and if it is not too large or bulky, it will become encysted and, in time, will disappear.

DR. WHITBECK of Rochester said that an operator, in his opinion, should choose the ligature material which is best adapted to the exigencies of the case. He used silk with entirely satisfactory results in supravaginal amputations when the sutures were entirely intraperitoneal, but in cases in which the abdomen or cervix has been left open he has had trouble subsequently from its employment. The use of ordinary chromicized catgut frequently unsatisfactory, in his experience, but the white variety of German catgut has always proved reliable. He invariably ties three knots in the ligature, in order to prevent the possibility of slipping.

The papers were also discussed by Drs. Crocket of Buffalo, Baldwin of Columbus, and Vander Veer of Albany.

SECOND DAY—AUGUST 18TH.

DR. M. ROSENWASSER of Cleveland opened the proceedings by reading a paper, entitled

POST-CLIMACTERIC CONDITIONS SIMULATING ADVANCED UTERINE CANCER.

He commends the teaching that irregular hemorrhages

and serosanguineous discharges, whether occurring during the parturient period or long after the menopause, are good and sufficient reasons to suspect malignancy. We carefully watch for early symptoms and by their detection occasionally succeed in removing the disease while it is still local. On the other hand, we are sometimes caught off our guard when confronted by post-climacteric cases which present all the classic characteristics of advanced malignant disease. Without the same circumspection exercised in the early stages we thoughtlessly pronounce the patient beyond hope, even specifying the extreme limit of duration of life.

The text-books are deficient in not sounding a note of warning against possible errors of diagnosis during the late stages. The so-called classic symptoms may be due to other (non-malignant) conditions of the genital tract. Owing to effacement of the vaginal portion of the cervix in old age, the differential diagnosis is limited in most cases to corporeal diseases of the uterus. Before the diagnosis of corporeal cancer can be made other diseases must be excluded.

The conditions which are likely to simulate advanced cancer are the following: (1) Senile vaginitis. (2) Foreign bodies in the vagina. (3) Gangrenous Fibroids. (4) Atrophic, senile, or post-climacteric endometritis. (5) Post-climacteric pyometra. Of these conditions the last especially is apt to lead to errors. The essayist presented the details of a case of pyometra recently occurring in his own practice, and submitted abstracts of five more or less similar instances found scattered through the literature of the past seven years. In all these cases either a positive or provisional diagnosis of corporeal cancer had been made. In conclusion the author called attention to the singular fact that in the presence of the essential predisposing conditions—age, low vitality, cicatricial tissue, adhesions, chronic inflammation and irritating discharges—cases of transformation into malignant disease are either unknown or exceedingly rare.

DR. RICHARD DOUGLAS of Nashville, Tenn., then read a paper, entitled

CERTAIN CYSTS OF THE ABDOMINAL WALL,

which was confined entirely to a consideration of abnormalities of the urachus. After referring to the anatomy of the structure he first took up the consideration of vesicoumbilical fistula. These fistulæ are not very uncommonly encountered during infancy and childhood. They frequently close spontaneously. In adult life the condition is unusual. As an instance, he quoted cases reported by Freer of Washington, Schullenbach, Hoffman, and Holscher. The last named is somewhat remarkable in that it followed an attack of gonorrhea. A man, twenty-five years of age, had a stricture as a result of that disease, the atresia of the canal being so great that it was only with difficulty that a filiform bougie could be passed. From this condition he suffered during several years, when the habitual retention of urine in the bladder caused a mechanical dilatation of the urachus, which set up an ulcerative process and caused perforation of the umbilicus through which the urine found exit. It was easy to com-

pletely evacuate the bladder through this opening by compressing the viscus above the symphysis pubis.

Usually there exists in an acute or chronic form some pronounced disease of the urethra or bladder, resulting in retention of urine or great vesical tenesmus. Suddenly there develops a tumor just above the pubis, at first of small size, distinctly circumscribed, quite hard, non-fluctuating, on account of the tenseness of the walls, and sometimes very tender. There is marked diminution in the amount of urine, and, usually, great dysuria. Nausea, vomiting, and great depression ensue. Pain over the entire lower abdomen is a constant symptom. Gradually the tumor enlarges, becomes softer, more elastic, and fluctuating. The local signs and general symptoms depend entirely upon the character of the urine which is forced backward into the urachus; if it is septic, a purulent inflammation of the walls of the urachus develops and the hypogastric tumor may closely resemble an acute abscess. There is, however, a frequent and more fortunate termination for these cases in which the tumor retains vesical connection, as by catheterization or otherwise the distended bladder is relieved, the urachus is drained into the bladder, the tumor suddenly disappears, and all pain and symptoms quickly subside.

The essayist then referred to the form of urachal cyst arising from a dilatation of the greater portion of the tube, the vesical and umbilical ends of which are closed, and reported a case occurring in his own practice. The patient was operated upon on June 20, 1896. There apparently was no ligamentous attachment between the cyst and the bladder. The cyst was removed, and an area of peritoneum extending from about three inches above the umbilicus to the symphysis and from two inches to the left of the linea alba and throughout the lumbar and iliac regions of the right side was separated from the parietes. Twenty-four hours after operation the patient became very dull, vomited freely, and was inclined to sleep. She died the following day. Upon autopsy, the entire detached peritoneum on the right side was found to be gangrenous. The peritoneum had not been stitched to the abdominal wall during the operation as it was thought intra-abdominal pressure would restore it to its former position.

CONSERVATION OF THE OVARY

was the title of the next paper, which was read by DR. B. SHERWOOD-DUNN of Los Angeles, Cal. This paper excited the most animated and general discussion of all read at the meeting. The essayist said that Brown-Séquard believed and taught as a principle of physiology that every gland, whether or not provided with excretive ducts, gives to the blood a certain useful principle, the absence of which is felt and made apparent after their extirpation, or the destruction or modification of their functional activity by disease. The importance of this theory, if it is based upon fact, cannot be overestimated; and if its truth be proved and generally accepted, it certainly will have a modifying influence upon the frequency with which the ovaries are extirpated. From observations based upon the cases of 100 women operated upon at the Broca and St. Louis Hospitals, Paris, the essayist said

that when the patient had prematurely lost both ovaries, 78 per cent. subsequently suffered a notable loss of memory, 60 per cent. were troubled with flashes of heat and vertigo, 50 per cent. evinced a change in character, becoming more irritable and less patient, some even being subject to violent and irresponsible fits of temper, 42 per cent. suffered more or less from mental depression, and 10 per cent. were so depressed as to verge upon melancholia. In 75 per cent. there was a diminution in sexual desire, some claiming that they experienced no sexual pleasure at all. Thirteen per cent. were not relieved from the pain from which they had suffered, 35 per cent. increased in weight and became abnormally fat, and some complained of a diminution of the power of vision. Twelve per cent. developed a change in the tone of the voice, it becoming heavier and more masculine in quality, 15 per cent. suffered from irregular attacks of minor skin affections, 25 per cent. had severe headaches, as a rule, increased in intensity at the catamenial period, 25 per cent. complained of the occurrence of nightmare, more or less constant, and about 5 per cent. suffered from insomnia. In a few cases there existed a sexual hyperexcitability not present prior to castration. A few patients, also, developed gastric reflexes and marked indigestion. All of these symptoms or changes were more marked in women under thirty-three years of age.

The essayist then said that any skepticism which he may have entertained regarding the theory of ovarian secretion and its usefulness and necessity to equipoise of the entire system had been entirely dissipated by the results of experiments made with ovarian substance, or ovarine, in patients who have lost both ovaries, or were suffering from troubles which in a greater or less measure were due to a diseased condition of an ovary. He gave the following accumulated evidence in support of his views:

1. Statistics show functional troubles to be more constant and intense in women who have lost both ovaries by operative interference.
2. There is little, if any, modification of these disturbances when the uterus is left in place and both ovaries removed.
3. These troubles are notably less when the uterus is removed and the ovaries left *in situ*.
4. By the favorable results of the experiments of Jayle, Mainzer, Mond, Chrobak, and Muret, in addition to his own, in the administration of ovarian substance, or ovarine, to patients suffering from various forms of disturbance, more or less intense, following double oöphorectomy, and, equally, those suffering from functional difficulties due to ovarian diseases.

He is in the habit of giving these patients 2 grains of ovarine, in capsules, daily. He deprecated the wholesale sacrifice of both ovaries, and made a plea for more conservative methods. Ignipuncture, according to the method of Pozzi, has given the most satisfactory results in his hands.

Following the discussion of this paper, the President of the Association, DR. JAMES F. W. ROSS of Toronto read an address, taking for his subject

SURGERY AND FACTS.

After thanking the members for the honor of his election, and referring feelingly to the pleasant association with them during the past ten years, he said, in part:

"Our work in this Association is confined within the diaphragm, the perineum, and the abdominal walls. We are met together to cultivate and promote a 'knowledge of whatever relates to abdominal surgery, obstetrics, and gynecology.' You will be called upon, during the session, to express your views and to criticise or support the views of others. We do not wish to deal with questions that are already settled but with those that are unsettled. Though the criticism should be friendly, I trust that it will be severe; no rash statements should be allowed to go from this Association unchallenged.

"I would like for a few moments to call your attention to some unsettled questions: First, let us consider the question of peritonitis. Are we able to do more to save the lives of patients suffering from peritonitis in its acute form than we were ten years ago? Are we not but little better off with all our antiseptic and aseptic washes, gauze and tube drains, and purgatives? I am satisfied that surgery can carry us no further when battling with this disease. Something else must come to our assistance. Perhaps, it may come through serum-therapy or through our materia medica in the form of an antidote. We know that a poison is formed, that it is rapidly absorbed into the system and rapidly reformed. We know that we may wash it out but that we are unable to prevent its reformation. We know that in some cases we are able to minimize its effect by using the two drainways, namely, the drainage-tube and the intestinal canal. But in spite of this drainage large numbers of patients die. I intend to try direct venous infusion of salines. The sulphate of magnesia seems to produce a peculiar effect in some of these cases. We know that ordinary salt is a preservative of meat and other albuminous materials. It may be that absorption of these salines into the blood may act as a harmless antiseptic and may destroy the ptomain poison present. I am speaking now, of course, of the peritonitis that we are unable to prevent, or peritonitis from contamination from within. When least expected the *post-mortem* examination will frequently reveal some hidden source of internal contamination."

DR. HERMAN E. HAYD of Buffalo then read a paper, entitled

RECENT EXPERIENCES WITH VENTROFIXATION.

He said that the Alexander operation and the various intraperitoneal operations upon the round ligaments have relieved and cured a great number of women hitherto doomed to more or less chronic invalidism. Ventrofixation, in properly selected cases, also has proved of benefit, but an operation which forcibly fixes an organ in an unnatural position cannot be deemed an ideal one. However, because such fixation of the uterus sometimes offers serious impediment to delivery, it is no reason why the operation should be relegated to oblivion as it is still applicable for the relief of that large class of suffering women

who have passed the child-bearing period who most frequently are the victims of procidentia uteri.

The essayist had made use of buried silkworm-gut sutures in his earlier operations but now is satisfied that a suture material which will maintain the organ in its new position during a few weeks is all that is necessary, as at the expiration of that time sufficiently strong adhesions will have formed to hold it. He has employed chromicized catgut, No. 3, in his last six cases, passing the sutures through the anterior surface of the uterus, just beneath the peritoneum, instead of through the fundus.

WHICH IS THE PREFERABLE OPERATIVE METHOD OF HOLDING THE UTERUS IN POSITION?

was the title of the next paper, which was read by DR. C. FREDERICK of Buffalo.

The essayist said that in all cases of retroversion of the uterus symptoms of the condition are not necessarily present, but a certain proportion are accompanied by hypertrophy of the organ, endometritis, leucorrhea, pain, backache, menorrhagia, metrorrhagia, and general malaise. Constitutional treatment fails to relieve a large number of patients so afflicted unless the uterus is restored to its normal position. The principal factors in the continuance of the ill effects of retroversion are found in the torsion of the contained vessels, infection of the endometrium, and defective drainage of the uterine cavity. Retroversion is the first stage of prolapse, and for this reason alone the organ should be replaced and held in position.

The operation of ventrofixation in cases of women liable to bear children is no longer practised by the essayist; he performs it only in cases of marked prolapse and when both tubes and ovaries have been removed, although in child-bearing women he has seen no bad results from it, several of his patients having had normal labors after it had been performed. His preference is given to Alexander's operation, or one of its modifications, however, in the case of women who have not yet reached the menopause, and when there are no adhesions or disease of the adnexa. Women who have never been pregnant are liable to have poorly developed round ligaments, which are prone to become detached to the anchoring sutures, and in these instances he opens the abdomen and shortens the ligaments after the method of Mann, Dudley, or Wylie. The method of the first is given the preference. He employs plain or chromicized catgut sutures in all cases. The different methods of shortening the ligaments through a vaginal incision have never appealed to him, and therefore he has not given them a trial.

TECHNIC OF THE DRY METHOD OF OPERATING

was the title of the next paper, read by DR. EDWIN WALKER of Evansville, Ind. He does not claim originality in this method, as it has been carried out by a number of operators, it has been used during several years, with good results, and consists, essentially, in not permitting a drop of water to come into contact with the field of operation, from the time the first incision is made until the wound is closed. Particular attention is paid to cleanliness and the sterilization of instruments and dress-

ings. Dry gauze pads are used to remove pus or other secretions.

DR. WALTER B. CHASE of Brooklyn then read a paper, entitled

SURGICAL SHOCK AND HEMORRHAGE, WITH SPECIAL REFERENCE TO PREVENTION AND TREATMENT.

After referring at length to the differential diagnosis of shock and hemorrhage following surgical operations, the essayist said that the treatment of shock divides itself into those measures which are preventive and those which are curative. The physical and mental condition of the patient bears a constant and close relation to the degree of shock likely to be induced by a given operation; therefore it is a self-evident proposition that whatever will fortify the patient in bodily and mental health, either by dietetic, therapeutic, or hygienic measures is worthy of the most careful consideration, and in elective operations time thus spent is well spent. The physical condition and functional activity of all the organs of the body should be a matter of careful and conscientious study. Bodily secretions and excretions must, as far as possible, be known, especially with reference to lithemic and uremic conditions.

The deleterious influence of shock is chiefly manifested by the nervous system and the heart. To fortify the latter organ strychnin, if practicable, should be administered during a few days prior to the operation to the extent daily of from one-twelfth to one-sixth of a grain. This drug is particularly applicable in cases of fatty and atheromatous degeneration of the heart and blood-vessels. If the arterial tension is low, with small volume, and fatty and atheromatous degeneration is absent, digitalis fulfils the indication, and should be given in moderation until its physiologic effect is apparent. In muscular weakness of the heart, the administration of one-eighth of a grain of spartein sulphate every two or three hours during twenty-four or forty-eight hours is indicated.

The alimentary canal should be absolutely empty during all elective operations, in order to limit the liability to nausea, flatulency, and impairment of intestinal peristalsis. In operations involving the peritoneal cavity it is a wise plan to require the patient to maintain a horizontal position for a period of two or more days prior to operation. The practice of leaving from one to three pints of a normal salt solution in the abdominal cavity after operation is a good one, as it prevents, to a great extent, the distressing thirst, which, of itself, is often a source of shock. The time consumed in an operation should be limited to the shortest period compatible with thorough work and proper technic. The patient should be saved from the shock of fear to the greatest possible degree. In shock accompanied by or resulting from hemorrhage, transfusion of normal salt solution should immediately be resorted to.

THIRD DAY—AUGUST 19TH.

The first paper of the day, on

PLACENTA PREVIA, WITH SPECIAL REFERENCE TO TREATMENT,

was read by DR. W. H. WENNING of Cincinnati. The

essayist said that he could offer nothing new in the way of suggestions for the treatment of placenta previa, but would refer particularly to the different methods of meeting the two principal indications, namely, to arrest hemorrhage, and to expedite labor. In the first named, each procedure has its peculiar advantages and disadvantages, and no special method is applicable for each and every case. He briefly summarized the histories of fifty cases which have been reported by different American practitioners during the past five years, and said it is surprising to note that about three times as many successes have resulted from the much condemned method of *accouchement forcé* in these cases as compared with other procedures.

The use of the tampon, rupture of the membranes, and version, were successively reviewed, and the speaker asserted that in a majority of instances reliance cannot be placed upon one of these alone, as it frequently requires a combination of all three at the proper time to bring the case to a safe conclusion. He laid down the proposition that the tampon is applicable only before dilatation of the os, rupture of the membranes after the onset of labor pains, and version after the os is dilated or dilatable. Each of these procedures is subject to certain modifications, and frequently it is difficult to determine when to abandon one and resort to the other. He insisted that if a tampon is inserted into the vagina a patient must never be left for a moment until delivery is complete.

Rupture of the membranes, as a rule, should be resorted to only when the os is sufficiently dilated to allow the head to press upon the cervix, or the hand to be introduced for the purpose of version. Internal version is the oldest and best-known method of delivery in placenta previa, and is most effective when the os is dilated or dilatable. *Accouchement forcé* is a dangerous procedure as it is very apt to cause laceration and even gangrene of the cervix, and is never justifiable unless no other means can be resorted to in order to terminate labor and save life.

COMPLETE HYSTERECTOMY AFTER INJURY DURING PARTURITION AND CÆSAREAN SECTION; WITH REPORT OF CASES,

was the title of the next paper read by DR. JOSEPH H. BRANHAM of Baltimore.

The first case reported was that of a woman, aged twenty-four years, who, when a child, was run over by a heavy wagon, sustaining an injury to the pelvis. During 1894, and again in 1895, she was delivered of a healthy child, each labor being difficult and prolonged. On July 15, 1896, she was again in labor, and when the speaker was called, after an interval of twelve hours, the child being alive and vigorous it was decided that the performance of Cæsarean section, for many reasons, was indicated. This was carried out, and a female child in good condition extracted. The patient died two days later from septic infection, directly traceable to previous vaginal examinations made by a midwife.

The second patient, a colored woman, had had five children and five miscarriages, all the labors having been protracted and requiring instrumental aid. Pelvis small, but presenting no marked deformity. Confinement occurred October 3, 1896. Tarnier forceps necessary to

complete delivery. The speaker first saw the patient on the following day. An extensive tear involving the vagina at its junction with the uterus on the left side, and a small wound on the right side, were discovered. The abdomen was greatly distended, and the pulse 120 to the minute and hardly perceptible at the wrist. On account of the great quantity of blood in the pelvic cavity, and the consequent probability of its giving rise to septic infection, laparotomy was performed. A tear extending from the left posterior segment of the uterus, across the upper part of the vagina and anterior wall of the rectum into the left broad ligament, about six inches in length, was found. In view of the extensive injury, and probability of infection, combined with the difficulty which would be experienced in closing the wounds with the uterus in position, complete hysterectomy was performed. Iron-dyed silk was used for the sutures. Recovery was complete, except that there has been a slight discharge of pus from the vagina at intervals up to the present time.

DR. FREDERICK BLUME of Allegheny, Pa., then read a paper, entitled

DYNAMIC ILEUS FOLLOWING OPERATIONS INVOLVING THE ABDOMINAL CAVITY, WITH REMARKS ON ADYNAMIC ILEUS.

The essayist said that decided progress in the direction of diagnosis and treatment of ileus following abdominal section was made when Olshausen, in 1887, called attention in an article read before the Berlin Obstetrical and Gynecological Society, to a form of intestinal obstruction which had not yet been recognized, namely, a paralysis of the gut not dependent upon septic peritonitis. The symptoms in these cases are increased pulse-rate, normal, slightly elevated or, in some instances, subnormal temperature, and vomiting. Two or three days after the performance of the operation, or even later, the symptoms of collapse manifest themselves, the pulse becomes rapid and feeble, the abdomen more and more distended, and retching and vomiting more frequent. Neither gas nor feces are expelled from the rectum. Death ensues between the fourth and tenth day, and is the result of general systemic intoxication from absorption of the decomposed intestinal contents.

In a recent article Engström reviews the literature of the subject and arrives at the conclusion that paralysis of the intestine can and does occur after operations involving the abdominal cavity without infection having taken place at the time of operation. Eventration and prolonged manipulation of the bowel are the most potent etiologic factors, causing irritation of the nerves of the mesentery and gut-wall, and leading to changes in the circulation. From his own experience Engström is able to confirm the statement of other observers that a paresis of the intestinal wall can be produced by the administration of strong saline purgatives, and it appears to be by no means improbable that, as a consequence of their use, a weakened condition of the gut-walls is produced prior to the operation. He looks upon the increased susceptibility of the nervous system, often so marked in patients about to undergo a surgical operation, as a predisposing etiologic factor.

The essayist said that the differential diagnosis between post-operative intestinal obstruction and dynamic ileus is practically impossible, but that in either case the only chance for the patient is afforded by speedy surgical interference. The surgeon, however, must distinguish between these forms of ileus and the very obstinate form of constipation so often met with, and so difficult to overcome, after operations in the abdominal cavity. The occurrence of fecal vomiting is not always a pathognomonic sign of ileus, as this vomiting sometimes occurs under other conditions and where there exists no indication for surgical interference.

THE ADMINISTRATION OF PHOSPHATE OF STRYCHNIA DURING GESTATION

was the title of the next paper, which was read by DR. W. B. DORSETT of St. Louis. The essayist said that while strychnin, either alone or in combination with iron, quinine, etc., has been administered with great success for many years as a tonic in anemic conditions, but little attention has been given to it as a tonic in anemia associated with pregnancy. Constipation, and the consequent occurrence of ptomain poisoning, as evidenced by languor, dizziness, and general malaise, aside from kidney lesions, is probably one of the most serious conditions with which the physician has to deal during the course of pregnancy, and now and then cases arise in which the attendant's ingenuity is severely taxed in making choice of a remedy to be used continuously during that period. The speaker has given a fair trial to strychnin in combination with iron or the bitter vegetable tonics, under these circumstances, and finally has adopted the use of the phosphate, in pill form. One one-hundredth of a grain is given after meals, which dose at times is doubled, as the conditions present may indicate. By this means a patient is built up and put in a good condition to pass through the ordeal of labor. The uterus promptly contracts after the completion of the third stage, and the use of ergot may be entirely dispensed with.

DR. A. GOLDSPOHN of Chicago then read a paper, entitled

THE FATE OF THE OVARIES IN CONNECTION WITH RETROVERSION AND RETROFLEXION OF THE UTERUS.

He said his subject did not include those less frequent instances of ovarian descensus which occur without backward deflection of the longitudinal uterine axis, primarily from pathologic processes which either have increased their weight or have left their ligamentary supports relaxed or elongated, so that one or both ovaries drop downward and inward into the median line of the pelvic canal, temporarily or permanently, even while the uterus remains in normal position. He drew attention only to one, the most prolific cause of descent of the ovaries—that met with in cases of a thoroughly retroverted uterus, and referred to the traumata which the ovaries experience in the majority of instances, to a variable degree, in their helpless association with the condition. The one substantial support of the ovary, which holds when the other attachments readily yield, is the utero-ovarian ligament. This

holds the abdominal end of the tube in proximity to the ovary, its edge carrying the *fimbria ovarica*, and it serves, in common to both the ovary and ampulla of the tube, as their lateral and upper suspensory ligament, finding its attachment in the posterior portion of the iliac fossa. An exact and typical location for the ovary has not yet been agreed upon; it is an extremely difficult matter to feel or to see its attachments in the living, and almost equally difficult to find them unmodified even in fresh and skillfully prepared cadavers. The wholesome view of B. S. Schultze, chiefly based upon extensive acute clinical observations, is that the ovary does not normally hang downward (pendant) from its hilum, but is held resting upon it by the tension of the ligaments attached to its ends. These also hold it in close apposition to the mesentery of the tube (broad ligament) which arches over it and forms a recessus for it (*ala vesperilionis*).

What are the forces which influence the position of the uterus and its adnexa? Substantially, they are as follows:

(1) A variable degree of tension peculiar to the interior of each hollow viscus. (2) Gravitation of the abdominal viscera, which is zero at the diaphragm and attains its climax in the median line of the pelvic cavity. (3) The most important and powerful, a general intra-abdominal tension created, according to Swiecicki, by sixteen abdominal and pelvic muscles. This force is greater in the erect than in the horizontal posture; it is greater during exertion than while standing placidly, and while it is everywhere equalled in the abdominal and pelvic cavities, still a temporary physiologic displacement or crowding downward of abdominal viscera occurs by virtue of proportionately greater power vested notably in the diaphragm and other muscles of the upper part of the abdominal parietes. The consequent reduction in lumen of the abdominal cavity and temporary recession of viscera toward the pelvis is the principal factor in abdominal pressure. It is the greatest force that is anywhere exercised in the interior of the human trunk.

That retroversion and retroflexion of the uterus are the most frequent and most potent cause of ovarian descensus is conceded by every author on that subject. It induces diseases of the ovaries in the following manner:

1. In most instances of retroversion the outer or upper suspensory (spermatic) ligaments of the ovaries have already been relaxed by the same cause which in most cases leads to retroversion, *i.e.*, pregnancy, which has been followed by subinvolution not merely in the uterus and its ligaments, but also in the upper suspensory ligaments of the ovaries which yielded by far the most when the ovaries made their ascent with the pregnant uterus into the abdomen. In those cases, on the other hand, in which the ovaries have not thus already practically lost the support of their upper suspensory ligaments, those yield more or less readily when the fundus goes over backward and downward, because of the greatly superior strength of the utero-ovarian ligaments.

2. Being now removed from their retreating nooks on the anterolateral walls of the pelvis, the ovaries become subject to the forces from above which move them still nearer, when possible, to the median line of the pelvis, back of

the retroverted uterus. In this descent they become arrested, in most cases, by the uterosacral folds or ligaments. This is the first degree of descensus. Each lies in a pocket at the side of the supravaginal portion of the cervix and the corpus uteri. One or both may pass over the uterosacral folds and slip down and forward to the bottom of the cul-de-sac of Douglas, thus accomplishing the second or complete degree of descensus.

The evils which attend this descent and abnormal position are of two kinds—partial venous stasis, and mechanical traumata. The torsion of the broad ligaments, in retroversion of the second degree, amounts to at least ninety degrees, but in addition to this the venous current from the ovary is obstructed by torsion and traction upon its hilum. Regarding traumata, an ovary in extreme descensus lies as in a vice which acts irregularly, but very many times daily. Every forcible exercise of intra-abdominal pressure crowds the retroverted uterus down upon it from above, and every filling of the sigmoid and rectum bruises it from below. Normal coitus is scarcely possible without marked compression of the female testicle and excitation of suffering.

The pathologic changes in such ovaries, resulting from the constant passive hyperemia and innumerable traumata inflicted upon them, are: (1) Hematomata in Graafian follicles and corpora lutea. (2) Edema. (3) Connective-tissue hyperplasia. (4) Chronic oöphoritis, leading to multiple cystic follicular degeneration, usually in parts of an ovary and cirrhotic changes in the remaining parts. (5) Even peri-oöphoritis, and eventually peritoneal fixation, may occur without infection, according to Saenger.

The essayist's conclusions were as follows:

1. In all cases of retroversion and retroflexion of the uterus a knowledge as to the location, mobility, and general physical condition of the ovaries should comprise an essential part in the diagnosis, as largely determining the urgency and nature of the treatment.

2. The welfare of ovaries in general demands such a degree of anterior inclination of the longitudinal axis of the uterus as will enable intra-abdominal pressure to bear upon the posterior surface of the uterus, and thereby to act in unison with its other supports to retain it and its adnexa in normal position and function.

3. Inasmuch as in the female pelvis, as well as elsewhere in the human body, the natural and considerable abilities of healthy tissues to defend themselves against microbic invasion (infection) are lowered or annulled in direct proportion to any degree of mechanical embarrassment of the venous circulation in the tissues or organs, it behooves gynecologists especially to be alert in recognizing and correcting all considerable anomalies in place or posture of the female generative organs or in securing to them their normal freedom.

After the reading of Dr. Goldspohn's paper, an exhibition of pathologic specimens, with relation of histories of the same, was made by Drs. Dorsett, Vander Veer, McDonald, Price, Ross, McMurtry, and others, and the Association then went into executive session. The following officers were elected for the ensuing year: President, Dr. C. A. L. Reed of Cincinnati; first vice-president, Dr. John Milton

Duff of Pittsburg; second vice-president, Dr. W. B. Dorsett of St. Louis; secretary, Dr. William Warren Potter of Buffalo; treasurer, Dr. Xavier O. Werder of Pittsburg; members of executive council, Drs. Albert Vander Veer of Albany, L. S. McMurtry of Louisville, J. H. Carstens of Detroit, and W. E. Davis of Birmingham, Ala.

Pittsburg was chosen as the next meeting place, and September 20 to 23, 1898, as the time, the latter being subject to change. The annual dinner of the Association took place during the evening.

FOURTH DAY—AUGUST 20TH.

DR. GEORGE S. PECK of Youngstown, Ohio, read a paper, entitled

FIFTY-TWO CASES ILLUSTRATING A PERSONAL EXPERIENCE WITH THE MEDICAL AND SURGICAL TREATMENT OF APPENDICITIS.

He said that although appendicitis is one of the most important as well as treacherous diseases with which a physician has to deal, it is a fact that many are unable to differentiate it from a clinical standpoint from the condition generally known as inflammation of the bowels. A diagnosis should never be difficult if the four cardinal symptoms of appendicitis are borne in mind, namely, sudden, severe pain in the abdomen, generally of a colicky nature; second, the invariable occurrence of nausea, and, frequently, of vomiting; third, increased bodily temperature; and, fourth, localized tenderness in the right iliac region. Some patients may have diarrhea, while others may be constipated. It is not essential that a mass be detectable, or that the rectus muscle be rigid, in order to confirm the diagnosis.

An early operation is always advisable. Certain surgeons advise simple incision and drainage, in the suppurative form of the disease, and the removal of the appendix subsequently, while others advocate the breaking up of existing adhesions and excision of the organ at once, and report good results from this procedure. Each case of the disease is a law unto itself, yet the speaker believes that in a vast majority of cases it is the duty of every surgeon to perform a radical operation at the first sitting. In the last three cases in which he has operated, and in which pus was evacuated, he separated adhesions, cleansed the cavity with hydrogen peroxid and distilled water, flushed the entire abdominal cavity, inserted a glass drainage-tube down to the appendical stump, and closed the incision. Two of the patients were discharged within three and the remaining one within four weeks of the date of operation.

He then reported the series of 52 cases in detail, 35 of the patients having been treated surgically, and 17 medically. Of the former, 25 were males and 10 females, the total number of deaths being 7, 4 males and 3 females. The cause of death in 5 instances was septic peritonitis; in 1, convulsions, and in 1, exhaustion. In 22 cases in which the appendix was removed the organ was gangrenous and perforated. In 13 cases an incision was made and the pus evacuated, and in 4 the patients had recurrent attacks after incision and drainage. All these cases, with one exception, were of the acute suppurating type of the disease, and all the patients received medical treatment

for a period varying from two to twenty days prior to operation.

Of the 17 cases in which medicinal treatment alone was instituted, 9 were males and 8 females. There were 9 deaths—of males 2, of females 7. The cause of death in 4 instances was septic peritonitis; in 4, rupture of the abscess into the abdominal cavity, and in 1, unknown.

DR. L. S. MCMURTRY of Louisville then read a paper, entitled

THE OPERATION ITSELF IN APPENDICITIS,

which will appear in conjunction with other papers read at the meeting in forthcoming issues of THE MEDICAL NEWS. Installation of officers-elect then took place, and the meeting was declared adjourned.

THERAPEUTIC HINTS.

For Gastric Indigestion.—In cases of gastric indigestion accompanied by what is commonly called torpidity of the liver, the following combination will be found of great value:

℞	Ac. nitromuriat. dil.	. . .	℥ ss
	Tr. nucis vom.	. . .	℥ ii
	Liq. potass. arsenitis	. . .	gtt. lxxii
	Ess. pepsin, q. s. ad.	. . .	℥ vi.

M. Sig. Dessertspoonful thrice daily after meals.

For Chronic Constipation.—An excellent combination in pill form for chronic constipation is the following:

℞	Ext. nucis vomicæ	. . .	gr. vi
	Ext. belladonnæ	. . .	gr. iv
	Ext. colocynth, comp.	. . .	gr. xlviii
	Aloes (purified)	. . .	gr. xxiv.

M., and ft. pil. No. xxiv. Sig. One at night.

"Rhinitis."—The pills which are so generally sold at drug stores under the name of "Rhinitis," and which are highly to be recommended for incipient "cold in the head," are made up as follows:

℞	Camphoræ	. . .	gr. ¼
	Ext. belladonnæ fl.	. . .	gr. ⅙
	Quinæ sulph.	. . .	gr. ¼.

One or two pills may be taken every three hours.

For Diarrhea.—One of the best combinations for diarrhea due to indiscretions in diet is the following, which should be preceded several hours by the administration of a tablespoonful of castor oil:

℞	Tr. opii	} aa	. . .	℥ ss
	Tr. capsici			
	Spt. camphoræ			
	Chloroformi (pur.)	. . .	. . .	℥ ii
	Alcoholis, q. s. ad.	. . .	. . .	℥ iii.

M. Sig. Teaspoonful every four hours.

For Dyspepsia.—The well-known "R. & S. Comp." mixture, than which no combination is so frequently prescribed at dispensaries, is composed of the following:

℞	Pulv. rhei	. . .	℥ i gr. xxxvi
	Sodii bicarb.	. . .	℥ ss
	Pulv. ipecac	. . .	gr. vi-viii
	Tr. Nucis vomicæ	. . .	℥ ii
	Aq. menth. pip., q. s. ad.	. . .	℥ vi.

M. Sig. Two teaspoonfuls before each meal.

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ORIGINAL ARTICLES.

SIXTY-FIFTH ANNUAL MEETING OF THE BRITISH
MEDICAL ASSOCIATION, MONTREAL, AUGUST
31 TO SEPTEMBER 3, 1897.

THE PRESIDENT'S ADDRESS.¹

By T. G. RODDICK, M.D.,
OF MONTREAL, CANADA;
PROFESSOR OF SURGERY IN M'GILL UNIVERSITY.

You have been welcomed to the Dominion of Canada by the noble Earl who is the worthy representative of our beloved Queen; you have been welcomed to the Province of Quebec, to which this city belongs, by our eloquent and justly esteemed Lieutenant-Governor; the Chief Magistrate of our city has given you "*Cæd mille faihthe*" in a manner in which only an Irishman with such a great sympathetic heart as he possesses can give; and now I rise to welcome you on behalf of the medical profession of Canada, and to thank you for the honor conferred upon this city and country by your presence here to-day. Would that I could find suitable language in which to thank you also for the high honor you have done me in electing me to preside at this great meeting of the British Medical Association, an honor which is appreciated none the less by the consciousness that it is not a personal matter but a compliment to Canadian medicine.

This meeting of the British Medical Association in Canada is an event which will serve still more to impress the year 1897 upon the memory of our people, the year of the Diamond Jubilee of our beloved Sovereign, Queen Victoria. In no part of her vast Empire—not even in its very heart—did her subjects celebrate the great event with more enthusiastic loyalty and devotion than in Canada, especially in this province, the home of the French-Canadians. We Canadians of both tongues love and honor our Queen. Long may she live! Deeply, too, have we appreciated here the splendid reception accorded in the old home to our Premier, the Right Hon. Sir Wilfred Laurier, whose distinguished bearing and grace of manner eminently fitted him for the important part it was his peculiar privilege to play in the magnificent ceremonies of the Jubilee. A French-Canadian, Sir Wilfred's presence in England as the chosen representative of the Dominion was an object

lesson to the Empire and to the world in the harmony existing between the two nationalities which comprise the Canadian people.

And here let me express on behalf of every representative from the British Isles, and on behalf of every Canadian present, the genuine pleasure we feel in having among us on this memorable occasion so many of our brethren from the United States. This only proves the cosmopolitan character of our profession; this is only another recognition of the unity of medicine. Legislators may squabble, the air may be filled with wild alarms, and war may appear imminent day by day, but our relations are not disturbed in the slightest degree; our interests are common—we are kinsmen in science; we go forward hand in hand, irrespective of race, creed, or color, having one intent only: the advancement of our noble profession, and through that the amelioration of the ills of mankind.

It is my privilege also to welcome the representative of another Republic, *La Belle France*, to whose gifted men of science our profession is so greatly indebted. This gentleman, who bears the credentials of his Government, and officially represents the great nation of which he is so bright an ornament, is known far and wide as the Professor of Physiology in the University of France, Dr. Charles Richet. In coming to Canada it cannot be said, nor will he feel, that he comes to a foreign country, for in the Province of Quebec he will find another France, with a delightful mingling of the old and the new, and his own beautiful language spoken with all the grace and purity of the old *régime*.

But we are further honored by the presence among us to-day of the most illustrious surgeon of our generation, Lord Lister, who stands for the rise and zenith of modern surgery. It has been well and truly said that as long as surgery is scientifically discussed Lord Lister's name cannot fail to be mentioned. We have only to compare the surgery of the time before 1873 with the surgery as practised to-day to appreciate all that he has done for the science. Can it for a moment be questioned that Lord Lister has made operative proceedings possible which only twenty-five years ago would have been considered criminal? Undoubtedly, the most powerful agency in the development of surgery in this century has been the introduction of the antiseptic and aseptic methods of wound treatment, which he initiated.

¹ Abstract.

It is, I understand, an unwritten law of the Association that the President shall not in his address encroach upon the topics which belong by right and usage to the readers of the main addresses and to the presidents of the various sections. With respect to the addresses, which it is customary to deliver on these occasions, medicine will be dealt with by one whose reputation is now world-wide—by our Osler—whose professional education was in great part received in this city, and who, I am happy to say, is still a Canadian. How he has been able to escape the alien law is a puzzle to many; but he has really only been borrowed for a time; he is merely passing through the United States in bond. We are only waiting until we can find a place large enough to hold him, when we will coax him back.

You will hear addresses in Surgery and Public Medicine, delivered by gentlemen who have devoted their lives to their special subjects.

A brief account of the history and the organization of the Association in its establishment of Colonial branches may not prove uninteresting. Canada has now seven branches, the Ottawa and Quebec branches having been formed within the last year. The formation of the Manitoba, Toronto, and Montreal branches was the immediate result of the visit to this country of Mr. Ernest Hart. In 1891, Mr. Hart, who has been editor of the *British Medical Journal* since 1867, passed through Canada, and addressed *en route* the members of the profession in Winnipeg, Toronto, and Montreal. In the course of a very happy speech made on this occasion by Mr. Hart he remarked that he looked forward to the time when the Canadian membership would be large enough to invite the Association to hold a meeting in Canada; and he hoped that the first meeting held outside the limits of the British Isles might be held in this country. Little did we think at the time that Mr. Hart's hopes would be so quickly realized.

One of the secrets of success of the British Medical Association is that it makes no distinction in the treatment of its members. Colonial members have all the privileges of the British members, and are always warmly welcomed at the headquarters in the Strand, and at the annual meetings. The Association has a large reserve fund of £40,000 sterling, which is the joint property of the members, to be used for public and professional purposes, and any suitable applications for grants for medical research, whether from British or Colonial members, always receive attention.

A gentleman to whom the Association is greatly indebted is Mr. Francis Fowke, who was appointed secretary and general manager in 1872. At that

time the Association was in rather a precarious condition financially, owing to its deficient organization; but shortly after Mr. Fowke took up the reins of office matters were found to improve steadily. Imagine the mighty power of the collective action of 17,000 earnest men pitted against false dogmas and ever battling for the truth! It is not, however, by the greatness of numbers that the Association will be judged—it is by the diversity and quality of results.

As it may be presumed that to the majority of those present here to-day Canada is almost an unknown country, I have thought that among one or two other subjects a few remarks on the atmospheric conditions and health-resorts of the Dominion would not be without interest.

The best way to understand the atmospheric conditions of a country is first to understand its physical features. The physical conditions of Canada are very remarkable. Broadly speaking, the country is separable by climatic and physical conditions into three great regions—the Eastern, Central, and Western regions, which approximately run north and south in the general trend of the continent. The Eastern region, which includes the older provinces of the Dominion—Ontario, Quebec, Nova Scotia, New Brunswick, and Prince Edward Island, besides the great fur territory stretching far to the east and northeast of James' Bay, extends from the Atlantic to Lake Superior and the chain of Great Lakes running in a northerly direction from Lake Superior to the Arctic Ocean. Between this great chain of lakes and the eastern base of the Rocky Mountains is the immense interior continental plain which constitutes the Central region of Canada, its southern part consisting of open prairie, its northern part of forest lands. The third part of the division, the Western region, is naturally well defined, consisting of the wide and wild mountainous border of the continent on the Pacific side—the Rocky, Selkirk, and Gold Ranges, which form the great Cordilleran belt, whose average width in Canada is 400 miles.

Eastern Canada is remarkable for its immense number of lakes, large and small, and for its irregular and winding rivers with numerous rapids and falls. Between the Laurentian Plateau on the north and the Appalachian mountain system on the south lies the great valley of the River St. Lawrence. The basin of this majestic river covers 530,000 square miles, of which 460,000 are in Canada. Above the city of Quebec the base of the Laurentian highlands and the ridges of the Appalachian system diverge, and the mighty river flows through an extensive low country of notable fertility in the earlier days of the great granary of Canada.

Included in the Eastern region is one of the most remarkable geographic features of Canada—the great fresh-water lakes or inland seas, Superior, Huron, Erie, and Ontario, which form the perennial reservoirs of the St. Lawrence. Together with Lake Michigan, which is wholly in the United States, they have an aggregate area of 94,750 square miles, an area larger than that of Great Britain. They stand at four distinct levels above the sea—Ontario, 247 feet; Erie, 573; Huron, 581, and Superior, 602. The Niagara Falls, the greatest and most impressive of the natural wonders of our continent, are the direct result of the great height of Lake Erie above Lake Ontario, the river connecting the lakes being only a few miles long. Besides the St. Lawrence, Eastern Canada has several other great rivers, notably the Ottawa, which has a course of 1800 miles and a basin of nearly 1,000,000 square miles, the St. Maurice, the Saguenay, and the St. John, the glory of New Brunswick, which, together with the Atlantic Slope, has a basin of 50,214 square miles. The Central and Western regions also have their abundant share of large and small lakes and great rivers, an account of which would fill reams of paper. It should be noted that the Canadian rivers and lakes collectively cover an area of 130,000 square miles and contain one-half the fresh water on the globe.

I draw special attention to this series of vast lakes and rivers because it exerts an immense and beneficent influence on the climate of Canada. It preserves the mean temperature while the land experiences the extremes. In summer the water is cooler and in winter warmer than the land conditions, which tend to modify the differences and to favor uniformity of climate. The southern boundary stretches over fully 4000 miles, along which line we find that Southern Ontario has the latitude of Central Italy, Nova Scotia that of Northern Italy, Manitoba and Vancouver that of Central Germany. Speaking generally, the Canadian summer may be stated at 60° to 70° F.

From its vast and varied extent, Canada may be said to be the possessor of several climates. Taking Solly's classification as to position, we have in Canada all the three land climates, the low, the medium, and the high. The first has an elevation up to 2500 feet, the second up to 4500, and the third from 4500 upwards. As to temperature and humidity, Canada comes under the category of "cold, moderate, and dry."

In the eastern region of the Dominion there are at least two localities which have been proved to possess many of the qualities which constitute a climate for convalescents from fevers and other depressing diseases, and also consumption in the incipient stage:

the Province of Quebec among the Laurentians, north of this city, of which the village of Ste. Agathe is the center; the other the Muskoka district in Ontario.

The first has been called the Adirondacks of Canada, having many of the features, physical and climatic, of that now celebrated plateau, situated in the northeastern part of the State of New York, and stretching from the Mohawk Valley in the south 150 miles north, almost to the frontier line. The average elevation of the two regions is about the same, being from 1600 to 1800 feet. The immense pine forests, together with the moderate temperature, constitute the chief characteristics of the Canadian district, from the medical point of view. No very systematic meteorologic observations have yet been taken of the Ste. Agathe region, but the indications will probably prove to be very similar to those of the American resort. It is in contemplation to erect a sanatorium on Trembling Mountain, overlooking the village of Ste. Agathe, which will doubtless in time rival the Adirondack Cottage Sanatorium near Saranac Lake Village, which has proved such a marked success under the able management of Dr. E. L. Trudeau. The elevation of the sanatorium will be 2500 feet, thus having an altitude of nearly 700 feet greater than the establishment at Saranac. It is the intention of the Quebec Government to set apart a sufficient portion of the Crown Lands to form a natural park in that part of the Province. It will be called the Trembling Mountain Park, and will cover an area of 100,000 acres of land, in which are several beautiful lakes. Within the boundaries of this park the sanatorium will be constructed.

One hundred miles north of Toronto, in the Highlands of Ontario, is the Muskoka Lake region, an area of about 10,000 square miles, perhaps the most picturesque portion of the whole Province. Within this district, which has a mean altitude above the sea of about 800 feet (200 feet above Lake Huron), there are nearly a thousand lakes and ponds, connected by innumerable streams. The chief lakes are Muskoka, Rosseau, and Joseph. These contain about 400 islands. It is a region abounding in pine forests; the climate is dry, and the air pure and invigorating.

In the Central Region of Canada, that section of the Northwest Territories known as Southern Alberta—the home of the cowboy—has much to recommend it as a health-resort. This strip of prairie and hill country is bounded on the north by the Canadian Pacific Railway, and on the south by the International boundary line. Patients can live there all the year round, and with the exception of an occasional snowstorm, which may cover the prairie to

a varying depth, nothing need interfere with their practically living in the saddle. The so-called Chinook wind has a remarkable influence over all this western section of Canada. It is a warm wind which blows with varying intensity from west to southwest. When the real Chinook blows the temperature often rises in a few hours from 30° below to 40° above zero. The snow, which in the morning may have been a foot deep, disappears, and before night everything is dripping. But in the space of a single day all the water is lapped up by the thirsty wind, and the prairie is so dry that a horse's hoof hardly makes an impression. It is well known that delicate lads sent from the British Isles to this section of the Northwest to work on the cattle ranches become in a year or two healthy and vigorous men, and are scarcely recognized on their return.

I think it can be satisfactorily proved that Canada is expressly fitted to develop a hardy race capable of great endurance. The races of the British Isles and the French race have certainly not degenerated here. Hingston proved this conclusively some years ago by observations made upon the medical students attending the various schools in this city. He found that the lumbar strength of the British-Canadian of the third generation exceeded by twenty pounds that of the recently arrived English and Scotch students. But the French-Canadian of the tenth generation did better than all by nearly thirty pounds. Not only has the French-Canadian increased in strength, but also in height and weight over the original Normandy stock.

Has the intellectual improvement in our people kept pace with the physical? We are a modest people, but I think we can say with truth that it has. We have a very respectable literature of our own, but the best intellect of the country is as yet absorbed in the practical affairs of life, and has too seldom found expression in art and literature.

We have in Canada several mineral springs of undoubted therapeutic value, and they are pretty generally distributed all over the Dominion, although differing materially in temperature and composition. The best known Canadian spas are the Caledonia, the St. Leon, and the Plantagenet Springs, in the Province of Quebec, and the Banff Springs in Alberta. Other springs in the Province of Quebec are the Abenakis and the Caxton. Besides these there are three or four artesian wells or springs. Of these the chief are the Laurentian Spring in the east end of this city (a mild alkaline water with sodium bicarbonate as its predominating ingredient), and the Radnor, a well of considerable repute situated in the County of Champlain. This was discovered a very few years ago when boring for water to supply

the workpeople engaged in the well known Radnor Forges. It has been likened to the German Seltzer, many of the properties being alike. It bids fair to become a rival in time of the celebrated Apollinaris water, to which it is preferred by many. The well is over 400 feet in depth. In the Province of Ontario the chief springs are the Winchester and the Preston, and those in the town of St. Catherines, near Niagara Falls. The best known and the most popular are the Caledonia Springs, situated on the line of the Canadian Pacific Railway, about midway between Montreal and Ottawa, and about nine miles from the Ottawa River.

The general question of medical education is one of great importance and of unceasing interest, nor is this interest confined to the profession; it is becoming universal. The needs of medical education are fortunately being more fully realized by those who, on account of their wealth and influence are in a position to render that substantial assistance which is so requisite. The time was when every medical school was a purely proprietary concern "run" for the money that was in it. We feel in Canada, and I think I can speak for the profession in the neighboring republic, that this day is past, that high-minded philanthropists like Lord Mount Royal, the late John Henry Molson, the McDonalds, the Drakes, and others with us, and the Johns Hopkins, the Stanfords, the Vanderbilts, the Rockefellers, the Miss Garretts, and others with them are beginning to realize that unendowed instruction in medicine must lead to imperfect results, and that private endowment, in the absence of State aid, has become an absolute necessity to a proper medical training.

Something of this kind has been recently attempted in the University of McGill. By a special arrangement with the Faculty of Arts it is now possible for students to obtain the degree of B.A. along with M.D., C.M., after only six years of study. It has been decided to allow the primary subjects (anatomy, physiology, and chemistry) in medicine to count as subjects of the third and fourth year in arts. It follows, then, that at the end of four-years' study a student may obtain his B.A. degree and have two years of his medical course completed. The last two years of study are, of course, devoted to the third- and fourth-year subjects in medicine. A certificate of Licentiate in Arts will be given along with the professional degree in medicine to those who previous to entrance upon their professional studies proper have completed two years in the Faculty of Arts, and have fully passed the prescribed examinations therein. By this plan also during the first two years of the arts course, the medical student practically completes his studies in physics, chemistry, botany, and ele-

mentary psychology. This scheme is still in the experimental stage, but there is every reason to believe that it will result satisfactorily. What deters so many from taking a full course in arts or science before entering medicine is the length of time consumed before the doctorate degree is reached, although I hope the time is not far distant when every graduate in medicine in Canada shall of necessity be also a graduate in arts or science.

I might state that the standard for the ordinary matriculation examination for entrance to medicine exacted by all universities and licensing boards in this country is, with one or two exceptions, very high. I doubt if the requirements in this way of the Medical Council of Great Britain are any higher.

Time will not permit of my discussing the subject of medical legislation in Canada at any length; and besides you will find it very fully treated in the excellent official guide or souvenir prepared for you by the Executive Committee.¹ In addition I might explain, however, that when the British-American provinces became confederated in 1867, under the British North America Act, the governance of educational matters was taken away from the Federal authorities and handed over to the provinces, each to look after them in its own way. In consequence we have since had a curious complexity of medical legislation, there being practically no uniformity among the provinces in regard to standard of study or qualification for practice. Each province has its own medical board or medical council, as the case may be, which has the power to grant license to practice, either after examination or on simply presenting the diploma of certain recognized universities. In the Provinces of Ontario and British Columbia, an examination is exacted; in the others the license is given under certain restrictions on presentation of the degree, although in the Maritime Provinces an examining board is now about to be established. In this way, as can readily be seen, a Chinese wall is built round each province, and the frontier is carefully guarded so that it is unsafe for a medical man to pass from one to the other unarmed with a license, because of the risk of fine or even imprisonment. Such a condition of affairs is hardly credible, and probably exists nowhere else to the same extent. What is the remedy? Two remedies have been suggested—either the establishment of a central examining board in each province with a uniform standard of matriculation and a uniformly high standard of curriculum which shall in time lead up to a general scheme of reciprocity; or, secondly, a Dominion Examining Board. The first scheme is at present under serious consideration, although there are many difficulties in the way of its accomplishment, none

of which is insuperable, however, providing a spirit of conciliation prevails. The second alternative (a Dominion Examining Board) would in many respects be more desirable, because not only could the licensee practise in any part of the Dominion, but he could register in Great Britain, and thus receive recognition all over the empire.

In conclusion, allow me to express the hope that the arrangements made by the Executive Committee for the entertainment of our guests may meet with appreciation and approval, and that the memories of the brief sojourn here may be all that is bright and happy.

BRITISH MEDICINE IN GREATER BRITAIN.¹

BY WILLIAM OSLER, M.D.,

OF BALTIMORE;

PROFESSOR OF MEDICINE IN JOHNS HOPKINS UNIVERSITY.

To trace successfully the evolution of any one of the learned professions would require the hand of a master—of one who, like Darwin, combined the capacity for patient observation with philosophic vision. In the case of medicine the difficulties are enormously increased by the extraordinary development which belongs to the history of the present century. The rate of progress has been too rapid for us to appreciate, and we stand bewildered, as it were, in a state of intellectual giddiness when we attempt to obtain a broad, comprehensive view of the subject. In a safer "middle flight" I propose to dwell on certain of the factors which have molded the profession in English-speaking lands beyond the narrow seas—of British medicine in Greater Britain.

Evolution advances by such slow and imperceptible degrees that to those who are part of it the finger of time scarcely seems to move. Even the great epochs are seldom apparent to the participants. During the last century neither the colonists nor the mother country appreciated the thrilling interest of the long-fought duel for the possession of this continent. The acts and scenes of the drama, to them detached, isolated, and independent, now glide like dissolving views into each other, and in the vitascope of history we can see the true sequence of events. That we may meet here to-day, Britons on British soil, in a French province, is one of the far-off results of that struggle. This was but a prelude to the other great event of the Eighteenth Century: the revolt of the colonies and the founding of a second great English-speaking nation—in the words of Bishop Berkeley's prophecy, "Time's noblest offspring."

Surely a unique spectacle that a century later de-

¹ Abstract of the Address in Medicine delivered at the Sixty-fifth Annual Meeting of the British Medical Association, Montreal, August 31 to September 3, 1897.

scendants of the actors of these two great dramas should meet in an English city in New France! Here, the American may forget Yorktown in Louis-berg, the Englishman Bunker Hill in Quebec, and the Frenchman both Louisberg and Quebec in Chateauguay; while we Canadians, English and French, in a forgiving spirit, overlooking your unseemly quarrels, are only too happy to welcome you to our country—this land on which and for which you have so often fought.

We English are the modern Greeks, and we alone have colonized as they did, as free peoples. There have been other great colonial empires—Phenician, Roman, Spanish, Dutch, and French—but in civil liberty and intellectual freedom *Magna Græcia* and Greater Britain stand alone. The parallel so often drawn between them is of particular interest with reference to similarity between the Greek settlements in Sicily and the English plantations on the Atlantic coast. Indeed, Freeman says: "I can never think of America without something suggesting Sicily, or of Sicily without something suggesting America." I wish to use the parallel only to emphasize two points, one of difference and one of resemblance. The Greek colonist took Greece with him. Hellas had no geographic bounds. "Massilla and Olbia were cities of Hellas in as full a sense as Athens or Sparta." The emigrant Britons likewise changed their sky, not their character, in crossing the great sea; yet the home-stayers had never the same feeling toward the plantations as the Greeks had toward the colonial cities of *Magna Græcia*. The assumption of gracious superiority which, unless carefully cloaked, smacks just a little of our national arrogance, is apt to jar on sensitive colonial nerves. With the expansion of the Empire and the supplanting of a national by an imperial spirit, this will become impossible.

It would carry me too far afield to discuss the differences between the native Briton and his children scattered so widely up and down the earth. In Canada, South Africa, Australia, and New Zealand types of the Anglo-Saxon race are developing which will differ as much from each other, and from the English, as the American does to-day from the original stock; but amid these differences can everywhere be seen those racial qualities which have made us what we are—"courage, national integrity, steady good sense, and energy in work."

Could some one with full knowledge patiently analyze the characteristics of British medicine he would find certain national traits sufficiently distinct for recognition. Three centuries cannot accomplish very much (and that period has only just passed since the revival of medicine in England), but the local

conditions of isolation, which have been singularly favorable to the development of special peculiarities in the national character, have not been without effect in the medical profession.

Above the fireplace in Sir Henry Acland's study are three paneled portraits of Linacre, Sydenham, and Harvey; the scroll upon them reads *Littera, Praxis, Scientia*. To this great triumvirate—as to the fountain-heads, we may trace the streams of inspiration which have made British medicine what it is to-day.

Linacre, the type of the literary physician, must ever hold a unique place in the annals of our profession. To him was due in great measure the revival of Greek thought in the Sixteenth Century in England, and in the last Harveian oration Dr. Payne pointed out his importance as a forerunner of Harvey. He made Greek methods available; through him the art of Hippocrates and the science of Galen became once more the subject of careful, first-hand study. Linacre, as Dr. Payne remarks, "was possessed from his youth till his death by the enthusiasm of learning. He was an idealist devoted to objects which the world thought of little use." Pains-taking, accurate, critical, hypercritical perhaps, he remains to-day the chief literary representative of British medicine.

While in critical scholarship and in accurate historical studies British medicine must take a second place, the influence of Linacre, exerted through the Royal College of Physicians and the old universities, has given to the humanities an important part in education, so that they have molded a larger section of the profession than in any other country. A physician may possess the science of Harvey and the art of Sydenham, and yet there may be lacking in him those finer qualities of heart and head which count for so much in life. Medicine is seen at its best in men whose faculties have had the highest and most harmonious culture. The Lathams, the Watsons, the Pagets, the Jenners, and the Gairdners have influenced the profession less by their special work than by exemplifying those graces of life and refinements of heart which make up character. And the men of this stamp in Greater Britain have left the most enduring mark—Beaumont, Bovell, and Hodder in Toronto; Holmes, Campbell, and Howard in this city; the Warrens, the Jacksons, the Bigelows, the Bowditches, and the Shattucks in Boston; Bard, Hossack, Francis, Clark, and Flint of New York; Morgan, Shippen, Redman, Rush, Coxe, the elder Wood, the elder Pepper, and the elder Mitchell of Philadelphia—Brahmins all, in the language of the greatest Brahmin among them, Oliver Wendell Holmes—these and men like unto them have been

the heaven which has raised our profession above the dead level of a business.

In the pictures referred to, Sydenham is placed between Linacre and Harvey; but science preceded practice, and Harvey's great Lumleian lectures were delivered before Sydenham was born. Linacre has been well called, by Payne, Harvey's intellectual grandfather. Harvey returned to Greek methods, and became the founder of modern experimental physiology, and the great glory of British scientific medicine. The demonstration of the circulation of the blood remains in every detail a model research. Harvey was a practitioner and a hospital physician. It is remarkable that a large proportion of all the physiologic work of Great Britain has been done by men who have become successful hospital physicians or surgeons, the better men preferring an active life in practice to a secluded laboratory career.

Thucydides it was who said of the Greeks that they possessed "the power of thinking before they acted, and of acting, too." The same is true in a high degree of the English race. To know just what has to be done, then to do it, comprises the whole philosophy of practical life. Sydenham—*Anglie lumen*, as he has been well called, is the model practical physician of modern times. He laid down the fundamental proposition, and acted upon it, that "all diseases should be described as objects of natural history." To do him justice we must remember, as Dr. John Brown says, "in the midst of what was a mass of errors and prejudices, of theories actively mischievous, he was placed, at a time when the mania of hypothesis was at its height, and when the practical part of his art was overrun and stultified by vile and silly nostrums." Sydenham led us back to Hippocrates; I would that we could be led oftener to Sydenham! Sydenham, not Linacre or Harvey, is the model British physician in whom were concentrated all those practical instincts upon which we lay such stress in the Anglo-Saxon character.

The Greek faculty which we possess of thinking and acting has enabled us, in spite of many disadvantages, to take the lion's share in the great practical advances of medicine. Three among the greatest scientific movements of the century have come from Germany and France. Bichât, Lænnec, and Louis laid the foundation of modern clinical medicine; Virchow and his pupils of scientific pathology, while Pasteur and Koch have revolutionized the study of the causes of disease; and yet, the modern history of the art of medicine could almost be written in its fulness from the records of the Anglo-Saxon race. We can claim almost every practical advance of the very first rank—vaccination, anesthesia, preventive medicine, and antiseptic surgery, the "captain jewels

in the coronet" of the profession, beside which can be placed no others of equal luster.

But there are signs of a great change. The old universities and the colleges, once the chief offenders, have been emancipated, and remain no longer, as Gibbon found them, steeped in port and prejudice. The value of authority *per se*, has lessened enormously, and we of Greater Britain have perhaps suffered as the pendulum has swung to the other extreme. Practice loves authority, as announced in "the general and perpetual voice of men." Science must ever hold that a judicious distrust and wise skepticism are the sinews of the understanding. And yet the very foundations of belief in almost everything relative to our art rest upon authority. The practitioner cannot always be the judge; the responsibility must often rest with the teachers and investigators, who can only learn in the lesson of history the terrible significance of the word.

Turning now to the main question of the development of this British medicine in Greater Britain, I can only indicate a few points of importance, and I must confine my remarks chiefly to the American part of Greater Britain. We may recognize three distinct periods corresponding to three distinct waves of influence, the first from the early immigration to about 1820, the second from about 1820 to 1860, and the third from about 1860 to the present time.

The colonial settlements were contemporaneous with the revival of medicine in England. Fellow-students of Harvey at Cambridge might have sailed in the "Mayflower" and the "Arbella." The more carefully planned expeditions usually enlisted the services of a well-trained physician, and the early records, particularly of the New England colonies, contain many interesting references to these college-bred men. Giles Firman, who settled in Boston in 1632, a Cambridge man, seems to have been the first to give instruction in medicine in the New World. The parsons of that day had often a smattering of physic, and illustrated what Cotton Mather called an "angelical conjunction." He says: "Ever since the days of Luke, the Evangelist, skill in *Physick* has been frequently professed and practised by Persons whose more declared Business was the study of Divinity." Firman himself, finding physic "but a meane help," took orders. These English physicians in the New England colonies were scholarly, able men. Roger Chillingworth, in Hawthorne's "Scarlet Letter," has depicted them in a sketch of his own life: "Made up of earnest, studious, thoughtful, quiet years, bestowed faithfully for the increase of knowledge, faithfully, too, for the advancement of human welfare—men, thoughtful for others, caring little for themselves, kind, just, true, and of constant

if not warm affections"—a singularly truthful picture of the old colonial physician.

Until the establishment of medical schools—University of Pennsylvania, 1763, King's College (afterward Columbia), 1767, Harvard, 1782—the supply of physicians for the colonies came from Great Britain, supplemented by men trained under the old apprentice system, and of colonists who went to Edinburgh, Leyden, and London for their medical education. This latter group had a most powerful effect in molding professional life in the pre-revolutionary period. They were men who had enjoyed not alone the instruction, but often the intimate friendship of the great English and European physicians. Morgan, Rush, Shippen, Bard, Wistar, Hossack, and others received an education comprising all that was best in the period, and acquired the added culture which can only come from travel and wide acquaintance with the world. Morgan, the founder of the medical school of the University of Pennsylvania, was away seven years, and before returning had taken his seat as a corresponding member of the French Academy of Surgery, besides having been elected a Fellow of the Royal Society. The War of Independence interrupted temporarily the stream of students, but not the friendship which existed between Cullen and Fothergill and their old pupils in America. The correspondence of these two warm friends of the colonies testifies to the strong professional intimacy which existed at the time between the leaders of the profession in the Old and New Worlds.

But neither Boerhaave, Cullen, nor Fothergill stamped colonial medicine as did the great Scotchman, John Hunter. Long, weary centuries separated Harvey from Galen; not a century elapsed from the death of the great physiologist to the advent of the man in whose phenomenal personality may be seen all the distinctive traits of modern medicine, and the range of whose mighty intellect has had few, if any, equals since Aristotle. Hunter's influence on the profession of this continent, so deep and enduring, was exerted in three ways. In the first place, his career as an army surgeon, and his writings on subjects of special interest to military men, carried his work and ways into innumerable campaigns in the long French wars and in the War of Independence. Hunter's works were reprinted in America as early as 1791 and 1793. In the second place, Hunter had a number of most distinguished students from the colonies, among whom were two who became teachers of wide reputation—William Shippen, the first professor of anatomy in the University of Pennsylvania, who lived with Hunter on terms of the greatest intimacy, and Philip Syng Physick, who was his house surgeon at St. George's Hospital, and his devoted

friend. But in a third and much more potent way the great master influenced the profession of this continent. Hunter was a naturalist to whom pathologic processes were only a small part of a stupendous whole, governed by law, but which could never be understood until the facts had been accumulated, tabulated, and systematized. He made all thinking physicians naturalists, and he lent a dignity to the study of organic life, and re-established a close union between medicine and the natural sciences. In the latter part of the last century and during the first thirty years of this, the successful practitioner was very often a naturalist. In Canada, many of our best naturalists have been physicians, and collections in this city testify to the industry of Holmes and McCullough.

Until about 1820, the English profession of this continent knew little else than British medicine. After this date, in the United States the ties of professional union with the old country became relaxed, owing in great part to the increase in the number of home schools, and in part to the development of American literature. To 1820, 114 native medical books of all kinds had been issued from the press, and 131 reprints and translations, the former English, the latter, few in number, and almost exclusively French (Billings).

Turning for a few minutes to the condition of the profession in Canada during this period, I regret that I cannot speak of the many interesting questions relating to the French colonies. With the earliest settlers, physicians had come, and among the Jesuits, in their devoted missions, there are records of *donnés* (laymen attached to the service), who were members of the profession. One of these, René Goupil, suffered martyrdom at the hands of the Iroquois.¹

Between the fall of Quebec in 1759, and 1820 the English population had increased by the settlement of Upper Canada, chiefly by United Empire loyalists from the United States, and after the War of 1812, by settlers from the old country. The physicians in the sparsely settled districts were either young men who sought their fortunes in the new colony or were army surgeons, who had remained after the Revolutionary War or the War of 1812. The military element gave for some years a very distinctive stamp to the profession. These surgeons were men of energy and ability, who had seen much service, and were accustomed to order, discipline, and regulations.

One picture on the canvas of those early days lingers in the memory, illustrating all the most attractive features of a race which has done much to make this country what it is to-day. Widmer was

¹ Parkman, "Jesuits in North America."

the type of the dignified old army surgeon, scrupulously punctilious, and in every detail regardful of the proprieties of life. "Tiger" Dunlop may be taken as the very incarnation of that restless, roving spirit which has driven the Scotch broadcast upon the world. After fighting with the Connaught Rangers in the War of 1812, campaigning in India, clearing the Sangur of tigers—hence his sobriquet "Tiger,"—lecturing on medical jurisprudence in Edinburgh, writing for *Blackwood*, editing the *British Press* and the *Telescope*, introducing "Beck's Medical Jurisprudence" to English readers, and figuring as director and promoter of various companies, this extraordinary character appears in the young colony as "Warden of the Black Forest" in the employ of the Canada Company. His life in the backwoods at Gairbraid, *Noctes Ambrosianæ Canadensis*, his famous "Twelve apostles" as he called his mahogany liquor-stand (each bottle a full quart), his active political life, his remarkable household, his many eccentricities—are they not all portrayed to the life in the recently issued "In the Days of the Canada Company?"

Turning now to the second period, we may remark in passing that the Nineteenth Century did not open very auspiciously for British medicine. Hunter had left no successor, and powerful as had been his influence, it was too weak to stem the tide of abstract speculation, with which Cullen, Brown, and others flooded the profession.

The awakening came in France, and such an awakening! It can be compared with nothing but the Renaissance in the Sixteenth and Seventeenth Centuries, which gave us Vesalius and Harvey. "Citizens" Bichât and Broussais led the way, but Lænnec really created clinical medicine as we know it to-day. The revival of medicine in Great Britain was directly due to the French. Bright and Addison, Graves and Stokes, Forbes and Marshall Hall, Latham and Bennett were profoundly affected by the new movement. In the United States, Anglican influence did not wane until after 1820. Translations of the works of Bichât appeared as early as 1802, and there were reprints in subsequent years, but it was not until 1823 that the first translation (a reprint of Forbes' edition) of Lænnec was issued. Broussais' works became very popular in translations after 1830, and in the journals from this time on the change of allegiance became very evident. But men rather than books diverted the trend of professional thought. After 1825 American students no longer went to Edinburgh and London, but to Paris, and we can say that between 1830 and 1860 every teacher and writer of note passed under the Gallic yoke. The translations of Louis' works and the extraordinary success of his American pupils, a band of

the ablest young men the country had ever seen, added force to the movement.

In Canada, the period from 1820 to 1860 saw the establishment of the English universities and medical schools. In Montreal the agencies at work were wholly Scotch. The McGill Medical School was organized by Scotchmen, and from its inception has followed closely Edinburgh methods. The Paris influence, less personal, was exerted chiefly through English and Scotch channels. The Upper Canada schools were organized by men with English affiliations, and the traditions of Guys, St. Bartholomew, St. Thomas, St. George, and of the London Hospital, rather than those of Edinburgh, have prevailed in Toronto and Kingston.

The third period dates from about 1860 when the influence of German medicine began to be felt. Teutonic medicine began to be manifested as a vitalizing power chiefly through the energy of Virchow. After the translation of the "Cellular Pathology" by Chance (1860) the way lay clear and open to every young student who desired inspiration. There had been great men in Berlin before Virchow, but he made the town on the Spree a Mecca for the faithful of all lands. From this period we can date the rise of German influence on the profession of this continent. It came partly through the study of pathologic histology, under the stimulus given by Virchow, and partly through the development of the specialties, particularly diseases of the eye, of the skin, and of the larynx.

In certain aspects the Australasian Settlements present the most interesting problems of Greater Britain. More homogeneous, thoroughly British, isolated, distant, they must work out their destiny with a less stringent environment than, for example, surrounds the English in Canada. The traditions are more uniform and of whatever character have filtered through British channels. The professional population of native-trained men is as yet small, and the proportion of graduates and licentiates from the English, Scotch, and Irish colleges and boards guarantees a dominance of Old-Country ideas. What the maturity will show cannot be predicted, but the vigorous infancy is full of promise.

Of India, of "Vishnu-land," what can one say in a few minutes? Three thoughts at once claim recognition. Here in the dim dawn of history, with the great Aryan people, was the intellectual cradle of the world. To the Hindus we owe a debt which we can at any rate acknowledge; and even in medicine many of our traditions and practices may be traced to them.

In estimating the progress of medicine in the countries comprising Greater Britain, the future

rather than the present should be in our minds. The awakening of the profession in the United States to a consciousness of its responsibilities and opportunities has caused unparalleled changes, which have given an impetus to medical education and to higher lines of medical work, which has already borne a rich harvest. Within two hundred years who can say where the intellectual center of the Anglo-Saxon race will be? The mother country herself has only become an intellectual nation of the first rank within a period altogether too short to justify a prediction that she has reached the zenith. She will probably reverse the history of Hellas, in which the mental superiority was at first with the colonies. At the end of the next century, ardent Old-World students may come to this side "as o'er a brook," seeking inspiration from great masters, perhaps in this very city; or the current may turn toward the schools of the great nations of the South.

Meanwhile, to the throbbing vitality of modern medicine the two great meetings held this month, in lands so widely distant, bear eloquent testimony. Free, cosmopolitan, no longer hampered by the dogmas of schools, we may feel a just pride in a profession almost totally emancipated from the bondage of error and prejudice. Distinctions of race, nationality, color, and creed are unknown within the portals of the temple of Æsculapius. Some Son of Beor, touched with prophetic vision, piercing the clouds which now veil the eternal sunshine of the mountain-top—some spectator of all time and all existence (to use Plato's expression)—might see in this gathering of men of one blood and one tongue a gleam of hope for the future, of hope at least that the great race so dominant on the earth to-day may progress in the bonds of peace—a faint glimmer perhaps of the larger hope of humanity, of the day when "the common sense of most shall hold a fretful world in awe."

THE SURGEON OF OLD IN WAR.¹

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I AM indeed greatly honored by having to deliver to you to-day an Address in Surgery. Fortunately for me the title is a wide one, and I shall take advantage of that fact to diverge from the strict consideration of surgical disease, and shall offer you instead a brief sketch of some of the most notable work done of old by a body of members of our pro-

fession who have never received their due reward—those, namely, who have devoted their lives to the succor of the sick and wounded in war.

Military Surgeons in the Roman Army.—Twelve months ago my friend, Dr. Barnes of Carlisle, ex-President of this Association, made me acquainted with a remarkable paper by the late Sir James Simpson, entitled "Was the Roman Army Provided with Medical Officers?"—a paper exhibiting such profound learning, so charmingly written, and so little known that I need not make any apology for acquainting you with some of its chief points of interest.

The most careful investigations have failed to make out from their writings whether the Romans regularly appointed physicians and surgeons to their armies or not, although nearly every other question relating to their military organization has been treated, sometimes very fully. Curiously enough, what little information we possess on the subject comes mainly from mortuary or from votive tablets.

The First Tungrian Cohort is known to have been present at the battle of the *Mons Grampius*, and to have served at Castlecary, at Cramond near Edinburgh, in Cumberland, and at Housesteads. The tablet is highly ornamented, and antiquarians hold that a rabbit and round bucklers carved in the upper part, which are emblems of Spain, show that the young military doctor was probably a native of that country. From various works treating of Roman inscriptions Simpson was enabled to find that four more tablets, in which surgeons of cohorts are mentioned, exist. They were found at Rome.

Ambroise Paré.—Hundreds of years went past before there came upon the scene any military surgeon of note, but when he did appear he was a man of transcendent merit—the illustrious Ambroise Paré. From 1517 to 1590, for seventy-three years, he lived an incessantly active life, the contemporary of Vesalius, the immediate predecessor of Harvey. We have only time to glance at the soldier-surgeon side of Paré's life. For over thirty years he followed the wars under four kings of France—Henry the Second, Francis the Second, Charles the Ninth, and Henry the Third, with intervals of a few years at home in Paris. Perpignan, Metz, Verdun, Rheims, Hesdin (where he was taken prisoner and had to write to his wife for his ransom), St. Quintin, La Fère, Amiens, the taking of Rouen, Dreux, Moncontour—these are but some of the bloody battles and sieges at which he was present. Through them all his humanity, his love of his profession, his independent character, and his jovial, frank disposition carried him safe, and made for the son of the poor country joiner warm friends among the greatest and noblest warriors of France.

¹ Abstract of an Address delivered at the Sixty-fifth Annual Meeting of the British Medical Association, Montreal, August 31 to September 3, 1897.

Amid all the splendid work, both anatomic and surgical, which Paré did the application of the principle of the ligature to bleeding arteries is of course that with which his name will be forever associated. In this day of grace it is impossible for us to imagine the horrors which awaited a wretched man as soon as his limb was cut off and the process of stopping the bleeding began. Think of the raw and exquisitely sensitive stump exposed to the red hot cautery or plunged into boiling pitch! For this frightful treatment Paré substituted the ligature, which in our own day, employed in the form of an aseptic animal material which the tissues quietly absorb, has practically reached the pitch of perfection. In his time, too, there was a fixed belief that the danger from gunshot wounds arose from the poison of the gunpowder conveyed on the bullet. To destroy this poison the treatment was to pour into the wound boiling oil in which elderwood bark had been stewed. On one occasion, not having this infernal concoction at hand, Paré used a cold mixture of yolk of egg, oil of roses, and turpentine to his wounded soldiers. He passed a sleepless night from dread that this would injure those to whom it had been applied, and his delight next day was proportionately great when he found that they had had but little pain, while their wounds were free from inflammation and swelling. This was his panacea for wounds ever afterward. There are of course persons who wish to make out that he was not original in the matter of the ligature. He himself says this about it: "Taught me, as I interpret it, by the suggestion of some good Angel, for I neither learned it of my masters nor of any other man. And thus I wish all chirurgions to doe. For it is not in our Art, as it is in civil affaires, that prescription, law, or authority should prevail over right reason."

Interesting mention is then made of Robert Clowes, an English surgeon who saw no little fighting between the years 1560 and 1604. Another interesting character was Peter Lowe, a contemporary of Clowes, whose studies marked a distinct advance in the knowledge of gunshot wounds. "Some think that there is a venenosity in the powder and a burning in the bullet; which is false, for the things whereof the powder is ordinarily made, as brimstone, saltpeter, coales of divers sorts of trees, water, wine, and aquæ vitæ, have no venenosity in them; likewise there is no burning in the bullet, for if the bullet of lead being shot a great way should burn, through heat would be melted itself." Next in order of military surgeons came John Woodall, who wrote the first English work especially devoted to military and naval surgery. Following him came Richard Wiseman, who has been termed the "father of English surgery," and not without reason. Wise-

man believed in the need of giving stimulants to a man who was in the habit of taking them if that man was in a dire strait. Speaking of the "Dunkirkers at sea," he says: "I could scarce ever cure them without allowing them wine, and thereby their spirits were kept up, and I had the liberty to bleed them as I thought fit."

Baron Larrey.—Up till the time of the French Revolution it is clear that military surgeons were not men of much importance, and probably had very little influence, if any, in the conduct of campaigns. But in the latter part of the last century war was made on a scale which was never known before, and was made also with a rapidity and a precision quite unprecedented. Moreover, the science and art of surgery had been rescued from quackery, and surgeons in actual practice were able to be of great and real service to the wounded. As a result of the vast masses of men that were hurled against each other, the number of wounded after a big battle amounted to thousands, and civilization had so far advanced that it was imperative that immediate help should be given them, so that about this time the military surgeon really became an important officer in warfare, and began to have his rank and pay well defined, and his merits (up to a certain point) recognized.

In 1776, near the Pyrenees, was born Jean Dominique Larrey, the *Chirurgien-en-Chef de la Grande Armée*, the friend and body-surgeon of Napoleon, and the greatest military surgeon that ever lived. He studied at the medical school of Toulouse, and in 1792 joined the headquarters of the Republican Army of the Rhine under Custine. Now, the ambulances of these days were obliged to remain about a league from the army, and the wounded were only picked up after the fighting was done. General Custine was a man who moved his troops very rapidly, which made matters worse for the wounded. This greatly affected Larrey, who set to work and devised a new ambulance hung on springs, and combining great strength with lightness. Such carriages were termed *ambulances volantes*. They could keep up with the advance guard of the army with the speed of flying artillery, and they carried off the wounded almost as they fell. Larrey had early perceived the enormous advantage a wounded man got by having his fracture set or his bleeding stopped as rapidly as possible, and by getting a roof over his head before night set in. General Beauharnais, in a despatch to the Convention, made special mention of "Surgeon-Major Larrey and his comrades with flying ambulances, whose indefatigable care in the healing of the wounded has diminished those afflicting results to humanity which have generally been inseparable

from days of victory, and have essentially served the cause of humanity itself in preserving the brave defenders of our country." The staff of a flying ambulance was about 340 in number. For each division there were four heavy carriages and twelve light ones. Some had two and others four wheels, and they were furnished with mattresses. In Napoleon's Italian campaigns they came greatly to the fore, and the great man displayed a lively interest in them, reviewing them and causing them to maneuver before him just as if they were on a battle-field. After one of these inspections he said to Larrey: "Your work is one of the most happy conceptions of our age. It will suffice for your reputation."

When Napoleon undertook his Egyptian campaign Larrey proceeded to Toulon to organize the medical staff. So readily did professional men respond to the call made by him that he was soon able to reckon on 800 well-qualified surgeons, of whom many had served in the army of Italy, and these were in addition to the medical officers actually attached to the regiments. This, I think, shows the value that the king of commanders set upon the health of his troops, and the trouble and expense which he was prepared to face in order to maintain it—a great contrast to the miserable way of dealing with this subject which has too long been the fashion with our military rulers. Not long after the landing at Alexandria a certain General Figuières was severely wounded. By able treatment he recovered, and in gratitude for the preservation of his life he asked Napoleon to accept a valuable Damascus sword. "Yes," said the latter, "I accept it in order to make a present of it to the Surgeon-in-Chief, by whose exertions your life has been spared." Upon the sword was engraved the words "Aboukir" and "Larrey," and the surgeon had it till the fatal day of Waterloo, when the Prussians robbed him of it.

Following his adored master through victory and defeat, Larrey at last stood alone at night on the field of Waterloo, except for some medical officers and the wounded who lay groaning around them. Down upon them came a squadron of Prussian lancers. Expecting no quarter, he fired his pistols at them and galloped away. They shot his horse and sabered him as he lay on the ground. Leaving him apparently dead, they went off. But he recovered his senses, and tried to crawl by cross-roads into France. Again he was seized by another detachment of Prussian cavalry. They robbed him promptly of all he possessed, and took him before a superior officer, who ordered him to be shot. What a reward from a soldier to one whose life had been passed in succoring soldiers! About a quarter of an hour before the sentence was to be carried out, a surgeon-major

recognized Larrey. He had attended with deep interest a course of lectures which Larrey had delivered in Berlin six years previously. The prisoner was brought before Bulow, and finally presented to Blücher, whose son had been badly wounded in the Austrian campaign, and captured by the French, and who owed his life to Larrey's exertions.

Larrey's honorable and glorious life terminated in 1842. Napoleon, when he made his will at St. Helena, wrote in it: "I bequeath to the Surgeon-in-Chief of the French Army, Larrey, 100,000 francs. He is the most virtuous man I have ever known." From Napoleon's lips the words of free, spontaneous, ungrudging praise such as this rarely fell.

Pestilence More Deadly than the Sword.—In the middle of the last century, while surgery had distinctly improved, the gross neglect of the Government, and the pig-headed obstinacy of the generals was such that our unfortunate soldiers and sailors were hardly any better off than they were in the days of Paré. It has been maintained that Smollett, in the appalling picture of naval life as witnessed in the miserable expedition to Carthage which he drew in "Roderick Random," and which is known to have been the record of his own experience as a surgeon's mate, grossly exaggerated the evils thereof. I do not believe this. Look at the awful and unsuccessful expedition to Porto Bello in 1726, when nearly the whole of the crews of the ships were destroyed by fever three times over; where two admirals, ten captains, fifty lieutenants, and about three to four thousand inferior officers and men perished without striking a blow. Look at the taking of Havana in 1762. The Earl of Albemarle took with him in the fleet 11,000 soldiers. Between June and the middle of October, when Cuba was ours, we had lost 560 men by wounds, and 4708 by sickness. At the end of the Seven-Years' War, a statement was drawn up in the *Annual Register* for 1763 from which it appeared that in all the naval battles of that war there were but 1512 sailors and marines killed while 133,738 had died of diseases or were "missing." Look even at the end of last century, and consider the wretched and disgraceful Walcheren campaign. Never did our poor soldiers fight with more gallantry than in that campaign, only to perish beside Dutch ditches and canals from fever and ague and dysentery.

Military Courage.—As we have just seen, Baron Larrey's whole life shows that, while absolutely devoted to the work of his profession, he displayed a cool courage on the field of battle not less heroic than the more dazzling deeds of his fellow combatant officers. Not less does it mark the military surgeon of the present day. Have you ever heard of

Surgeon Thomson who, during the Crimean war, when the army marched off after the battle of the Alma, volunteered, with his servant, John McGrath, to remain behind on the open field with 500 terribly wounded Russians, and passed three awful days and nights—these two Englishmen alone—among foreign foes, some dead, some dying, and none able to raise a hand to help themselves? Have you ever heard of Assistant-Surgeon Wolseley, of the 20th Regiment, who, at the battle of Inkerman, had quietly established his field hospital in that awful place, the Sandbag Battery? When the 150 men, who were all that remained of its defenders, were forced to desert it, about 100 of them fell back in one direction, and in that they found, at thirty paces from them, a Russian battalion blocking their path. There was not a combatant officer left; so the assistant-surgeon took command. He had not even a sword with him, but, laying hold of a firelock with a fixed bayonet on it, he spoke a few words to the men within range of his voice, and told them that what they now had to fight for was not victory but life. Then he gave them the word of command: "Fix bayonets, charge, and keep up the hill." The soldiers answered him with a burst of hurrahs, sprang forward to the charge, and the next instant were tearing through the thickest of the Russians. One-half of these reached the other side alive. Have you ever heard of Surgeon Landon, who was shot through the spine while attending the wounded on Majuba Hill? His legs were paralyzed, but he caused himself to be propped up, and continued his merciful work till his strength ebbed away. When unable to do more he quietly said: "I am dying; do what you can for the wounded." Have you ever heard of Surgeon-Captain Whitchurch, who gained the Victoria Cross at the beleaguering of Chitral for the most determined courage in endeavoring to save the life of Major Baird? Yes, you have for last year at Carlisle you gave him the gold medal of the Association, the highest honor which our Association can give to its members. There died the other day a certain Surgeon-General Reade, C.B., V.C. During the siege of Delhi, while attending to the wounded at the end of one of the streets of the city, a party of rebels advanced from the direction of the bank, and having established themselves in the houses in the street commenced firing from the roofs. The wounded were thus in very great danger, and would have fallen into the hands of the enemy had not Surgeon Reade drawn his sword and, calling upon a few soldiers who were near to follow, succeeded under a very heavy fire in dislodging the rebels from their position. Surgeon Reade's party consisted of about ten in all, of whom two were killed and five or six wounded. Ladies and

gentlemen, Surgeon Reade was a Canadian, and the son of a colonel of the Canadian Militia. Of the 118 wearers of the Victoria Cross 14 are surgeons, nearly 12 per cent. of the whole number. They stand in the proportion of $9\frac{1}{2}$ per cent. of all the officers of the army, so at all events they have contributed not less than their fair share of the deeds of valor which alone can win that glorious distinction.

The Army Medical Service To-day.—I have diverged from the beaten track common to the givers of addresses such as this to tell you what splendid men have been the military and naval surgeons of old, who not merely did their duty nobly and courageously as such, but who have in their day enormously contributed to the advance of the art of surgery. I have done it with a purpose; with the hope of attracting more strongly than ever the sympathy and help of this great Association to their military brethren in a critical juncture of their history. To-day Her Majesty's Government cannot induce candidates to come forward for the medical service of the Queen's army. And why? Because it has persistently treated the Army Medical Department meanly and shabbily. To-day the Government of India can secure the services of the pick of our newly fledged doctors for its army. And why? Because it has always treated the Indian Medical Service liberally and generously. I am not going to enter into the reasons for this; I merely desire to emphasize one point, namely, that money is not at the bottom of this difficulty.

CLINICAL MEMORANDA.

A CASE OF NYMPHOMANIA.¹

BY JOHN O. POLAK, M.D.,
OF BROOKLYN, N. Y.

LIZZIE B., aged twenty-nine, single, of German parentage, was seen by the writer in consultation with Dr. Wm. Boes, October 1, 1896. The following history was elicited: Her mother has suffered from melancholia since her menopause, which followed closely upon the birth of her last child. Her father and brother are in perfect health. The patient had the diseases common to childhood, which were not followed by complications. She first menstruated when fifteen years old. The menses were normal, regular, and painless from that time until her nineteenth year, and her general health was exceptionally good. About ten years ago her temperament seemed to change; she became morose and gloomy, shunned the society of her friends, and spent much of her time in solitude. There were periods when she would resume her former habits, but these periods were soon followed by melancholia. While the melancholia was periodic, no relation seemed to exist between

¹ Read before the Kings County Medical Association.

the attacks and her menstrual epochs. Diversion of the mind by constant manual labor made her more cheerful, but she became melancholy again upon being unemployed. She would generally avoid her friends and relatives, and would sit alone for hours masturbating. It has been supposed that her mother's condition aggravated this mental perversion. All reasoning, threats, and bodily restraint failed to prevent the pernicious practice. She would even masturbate in the presence of friends and relatives. Her conversation was silly, and her facial expression stupid. Her general health declined as a result of such unnatural excesses. During the past year she has been under treatment at a sanatorium, without success. Several well-known specialists have advised operation, as offering the only hope of recovery. When seen by the writer she was pale and emaciated, refused to talk, and seemed to enjoy the vaginal examination to which she was subjected. At this time she was masturbating from twenty to forty times a day. Physical examination of the pudendum revealed hypertrophied nymphæ, most marked on the left side. The clitoris was somewhat larger than normal, and the prepuce adherent. The uterus was small and in normal position, and the ovaries and tubes presented no pathologic change. The uselessness of an operation for so pronounced a mental state was fully explained to her father, who, nevertheless, insisted that something radical must be done, and assumed all responsibility. The writer reluctantly consented to operate.

On October 13th, under ether, the clitoris and nymphæ were excised and the labia majora and mucous membrane of the vagina united by interrupted sutures. The vestibule, containing the meatus urinarius, was sutured into the interior angle of the wound, and the line of sutures sealed with iodoformized collodion. Convalescence was uninterrupted and afebrile. The sutures were removed on the eleventh day. Since the operation, three months ago, the patient has shown no desire to return to her former habits; she seems happier, and her mental condition is clearer.

A CASE OF GENITO-URINARY TUBERCULOSIS; NECROPSY.¹

BY HERBERT MAXON KING, M.D.,
OF GRAND RAPIDS, MICH.;
PHYSICIAN TO BUTTERWORTH HOSPITAL.

On June 8, 1896, I saw, in consultation, a case of genito-urinary disease presenting certain features which I think are of sufficient instructive value to warrant a brief report. The patient was a girl thirteen and one-half years of age. Her personal history was as follows: During the first two years of life she was extremely delicate, after which she developed apparently as well as any other child. At the age of six years she had diphtheria from which convalescence was perfect. One year later she had measles. The parents noticed an arrest of development in the enamel of the permanent teeth as they appeared; otherwise nothing unusual was noticed about her until the latter part of December, 1895, when she complained of

pain during micturition. As this was not relieved by ordinary measures, a physician was called during January 1, 1896, who diagnosed the condition as cystitis. On the opening of school, after the holidays, the patient was well enough to attend for nearly two weeks, but then, the symptoms increasing, she was taken from school, and on January 20th another physician was consulted, who continued in attendance until March 27th. I believe his diagnosis was identical with that of the first attendant. During this time pain upon micturition had increased and then become constant, being referable to the region of the bladder. This pain was controlled by means of opium, and the patient was given sitz baths and diuretic waters.

On March 29th another physician was called, who continued in attendance until May 2d. His diagnosis was paralysis of the neck of the bladder, and he proceeded to cauterize the mouth of the urethra, where the mucosa appeared intensely injected and excoriated. Urinary incontinence had appeared shortly before this, and it continued throughout the course of the disease, there being a constant dribbling when I first saw the patient. Medication was now directed toward improving digestion and nutrition, and cannabis indica was employed, with partial success, to control pain, while daily local treatment was prescribed, though I could not learn in what this consisted.

On the 10th of May, owing to the absence from town of the physician in attendance, another change was made. The child had now been steadily losing ground for four months. Emaciation, constant suffering (which was increasing), incontinence, and the history of the case, alarmed the last-called physician, and a consultation was advised. A surgeon was called who explored the bladder, under chloroform, for stone, with negative results. A gynecologist, who was then called, detected an abdominal tumor among other things, and finally advised microscopic examination of the urinary sediment, suggesting that the trouble might be tuberculous. This was the first time that attention was especially directed to the urine. Owing to the incontinence, only a very small quantity was obtained, which was found to be at least one-half pus. No kidney elements were found. A bacteriologic examination was not made, and as pyuria had been observed before this time, little or no additional light was thrown upon the case.

On June 2d I was called in consultation. Palpation revealed a large, rounded, soft, and fluctuating tumor which filled the right side of the abdominal cavity. The external genitals were swollen and exquisitely sensitive, notwithstanding the patient was narcotized. Eroded patches were present on the walls of the vagina and especially at the meatus. Examination of the thoracic viscera gave negative results. During twenty-four hours about four ounces of purulent urine was collected, analysis of which, as might have been expected, resulted in the detection of a large amount of albumin and peptones and a very insufficient amount of urea. Microscopically, in addition to the pus, I found many epithelial and granular casts and kidney epithelium, although the large amount of pus present made a study of

¹ Read before the Michigan State Medical Society, May 14, 1897.

formed elements difficult. Specimens of sediment stained on cover glasses demonstrated the presence of large numbers of tubercle bacilli in characteristic arrangement. On June 11th the patient died from septicemia or uremia, I am unable to say which was the most active morbid agent.

The autopsy was made on June 12th, from my notes of which I abstract the following important facts: *Thoracic Viscera*.—The lungs, pleurae, heart, pericardium, and upper respiratory organs showed absolutely no foci of tuberculosis, and, aside from the general condition of innutrition, were normal. *Abdominal Viscera*.—The liver, spleen, pancreas, and intestinal tract proper presented no macroscopic evidences of disease. Microscopic sections were not made. Many of the mesenteric glands were enlarged, and microscopic examination proved them to be tuberculous. The peritoneum was free from tubercles. On the right side, the tumor, which occupied almost the entire cavity and pressed the liver upward, and the intestines to the left and outward, proved to be the distorted remnant of the right kidney. All trace of kidney structure proper was lost, and the mass was simply a fibrous, pus-secreting capsule about six inches long by four inches wide, filled with creamy, fluid pus, and communicating with the bladder by a thickened ureter. The pus contained numerous tubercle bacilli, bacilli coli communis, and streptococci. The left kidney presented the evidences, macro- and microscopically, of subacute parenchymatous nephritis, but not of tuberculosis. The left ureter was not diseased except at the bladder. The bladder wall was from one-half to three-fourths of an inch in thickness, the increase being in the mucosa and submucosa. The epithelial layer was almost completely eroded, the vessels were intensely injected, and about the mouth of the right ureter were several ulcers with raised and overhanging edges. The capacity of the viscus did not exceed one ounce. The walls of the urethra were thickened and the mucosa eroded. The condition of the vagina and external genitals was as above described.

I report this case because I believe that it teaches, (1) that renal tuberculosis may be idiopathic; (2) that it may be confined to one kidney and progress to a fatal termination without involving the other kidney in the specific disease, notwithstanding the continuity of the membranous lining—in other words, that involvement of the other kidney does not occur from hetero-infection; (3) that the golden opportunity for cure is lost in the failure to recognize the disease in its early stages before the bladder is involved and when a nephrectomy would promise the best results.

MEDICAL PROGRESS.

A Simple and Accurate Method of Estimating the Percentage of Hemoglobin.—IDE describes in the June number of *Medicine* a ready means of determining the percentage of hemoglobin, by a method more simple and more accurate than any other yet devised. The two methods most in use at present are those of Fleischl and Gowers. Both of these are simple but also inaccurate, while the

necessary apparatus is expensive. The method which Ide has found so satisfactory is that of Hammerschlag, and is known as the specific-gravity method. It is based upon the fact that the relation of hemoglobin to the specific gravity of the blood is practically constant, more nearly so, in fact, than the relation between hemoglobin and the number of red blood-corpuscles.

The apparatus required is simple and inexpensive, and may be easily transported. It is as follows: (1) A hydrometer jar; (2) a hydrometer (or urinometer); (3) a pipette of small caliber; (4) a glass rod; (5) some steel pens; (6) a bottle of chloroform; (7) a bottle of benzol; (8) a bottle containing a mixture of the latter two, and (9) some filter paper.

The procedure is as follows: The mixture of chloroform and benzol (beginning at the first test with equal parts for instance) is poured into the hydrometer jar. The finger tip of the patient is sterilized with a solution of carbolic acid and pricked with a sterile pen from which one of the nibs has been broken. A drop of blood which has oozed from the puncture (not pressed out) is sucked into the pipette, and then gently forced out over the center of the mixture, and shaken off. To avoid mixing air with the blood-drop all the blood should not to be forced out of the pipette, but a little left in its tip. If the blood-drop sinks the mixture must be made heavier with a little chloroform; if it rises benzol must be added. The mixture must be agitated with the glass rod after each addition of either fluid, thus keeping the chloroform and benzol well mixed, and avoiding the breaking up of the blood-drop. When the drop remains stationary, twirling around but neither rising nor sinking, the specific gravity of the mixture corresponds with that of the blood, and may then be recorded with the hydrometer. The same mixture is used indefinitely, the blood being filtered out after each test. The hydrometer jar must be kept absolutely clean, that no fine particles of foreign matter may float in the mixture, and adhere to the blood-drop.

Having determined the specific gravity of the blood, one has only to refer to a table in order to know what percentage of hemoglobin it contains. Such a table is approximately as follows:

Specific Gravity.	Hemoglobin.
1033 . . .	25 per cent.
1035 . . .	30 " "
1038 . . .	35 " "
1040 . . .	40 " "
1045 . . .	45 " "
1048 . . .	55 " "
1050 . . .	65 " "
1053 . . .	70 " "
1055 . . .	75 " "
1057 . . .	85 " "
1060 . . .	95 " "

This table is not entirely accurate but it is approximately so, and has been found reliable at least in anemia, chlorosis, malignant tumors and tuberculosis. At any rate, tests made with the blood of the same patient from day to day will show whether treatment is producing an increase in the amount of hemoglobin. A further advantage of this method is that it does away with the necessity of fine discrimination between different tints.

Tuberculosis and Malignant Disease.—KELYNACK, in a study of the relation between tuberculosis and malignant disease (*Med. Chronicle*, Manchester, June, 1897), found that of 145 cases of malignant disease 22 presented clear evidence of either healed or active tubercle, about 14 per cent., or rather less than the percentage of non-cancerous persons who are affected by tuberculosis. Of these 22, all but 2 had tuberculosis of the lungs. There were 17 cases of carcinoma and 5 of sarcoma. The conclusion is drawn that the victims of malignant disease have not been more subject to tuberculous processes than have "general" cases, and that malignant disease has little or no influence in reviving latent tuberculous processes, or in predisposing to fresh infection.

Simple and Accurate Methods for Detecting and Measuring Abduction and Adduction of the Thigh.—HOFFMANN (*Med. Review*, June 12, 1897) mentions two simple and accurate methods, long employed by him, for detecting and measuring the abduction and adduction of the thigh, which do not necessitate either special apparatus or reference to a table. A slight amount of shortening is often so perfectly compensated for by tilting of the pelvis that its presence is detected with difficulty. If, however, the two limbs be placed together, it will be observed that the anterior furrow at the bend of the thigh on the adducted side is deeper and longer than that on the opposite side; while if abduction be present, the reverse is true. The genitals and the fold between the buttocks will always point toward the adducted thigh. This shows at a glance whether there is abduction or adduction; but it does not determine the degree. This is accomplished in the following manner:

The point midway between the iliac spines is located with a tape-measure, and is marked with ink. A second mark is made directly over the symphysis pubis. This procedure gives two points in the central line over which a string is stretched and continued to the soles of the feet. This string falls midway between the malleoli when the limbs are in a straight position. If either limb be abducted, both the condyle and the malleolus will be outside the string; if adduction is present, they will be inside. The change in position from time to time may be found by measuring and recording the distance of the malleoli from the string.

Disinfection of the Body by Actol.—In the *Centralbl. für Bakteriologie, etc.*, May 10, 1897, MARX describes the result of experiments to determine the disinfecting power of actol (silver acetate), and more especially its power to disinfect the whole body, a property which has been claimed for it by Credé and others. Marx found that it possesses no such action, and that animals which had been subjected to large doses of actol for varying periods of time died as quickly after infection as the control animals. Furthermore, by chemic examination of the serum of animals treated with actol, not a trace of the salt was found. Actol injected into an infected animal had no effect upon the course of the diseased process. It was, however, proved that in a fatal case of anthrax contracted after the silver treatment, the site of the injection was

absolutely free from bacilli. This shows the great value of the drug as an antiseptic, and it is certainly worthy of a further trial.

THERAPEUTIC NOTES.

Kryofin.—Favorable reports of the action of this new antipyretic continue to be recorded. While closely allied to phenacetin in its physiologic action, but 7.5 grains, the usual dose, is necessary to produce a more favorable effect than 15 grains of the other drug. It also possesses analgesic power, and as an antineuralgic EICHHORST (*Deut. Med. Wochenschrift*) has employed it successfully. Kryofin occurs as white, odorless, tasteless crystals, soluble in 52 parts of boiling and 600 parts of cold water. It is conveniently administered in powder form, and enclosed in wafers. No unpleasant symptoms have been observed to follow its use.

The Specific Action of Quinin in Malarial Fever.—At a recent meeting of the North Carolina Medical Society, E. C. Register, M.D., of Charlotte, read a paper with the above title, and stated the following as his conclusions in reference to the action of quinin in the continued form of malarial fever:

Malarial fever without complications will subside after the plasmodia of malaria disappear from the blood; we have in quinin the means to completely eradicate malarial poison from the body; malarial fever occurring in the person of a previously healthy subject, and in the central United States, if at once recognized and properly treated never ends in death; it is speedily curable and never continues, provided the nature of the disease is recognized and appropriate treatment instituted.

As a result of microscopic examination of the blood of a large number of patients suffering from a remittent form of the disease he claimed that the reason quinin does not always produce favorable results in these cases lies in the fact that the drug is improperly administered. He contended that quinin is very imperfectly absorbed when given by the stomach when the patient has a temperature greater than 102° F., but that if the degree of fever is reduced by means of antipyrin, antifebrin or phenacetin, quinin will then cause the crescentic and ring-shaped bodies, the probable etiologic factors in this type of the disease, to disappear from the blood as quickly as it causes the disappearance of the spheric bodies in an ordinary case of intermittent fever.

For Chronic Myringitis.—

℞	Soziodolic acid	gr. vii
	Absolute alcohol	gr. xxx
	Castor oil	3 v.

M. Sig. For external use.

A few drops of this solution are allowed to flow upon the tympanic membrane. By means of its daily application the thickening of this membrane is reduced, and even disappears after three- or four-weeks' use. The soziodolic acid is perfectly dissolved in this mixture of alcohol and castor oil, whereas with other oils, olive oil for example, it simply forms an emulsion.—*The Med. Week.*

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SATURDAY, SEPTEMBER 4, 1897.

THE IMPORTANCE OF A GENERAL KNOWLEDGE OF BACTERIOLOGY.

THE discovery of bacteria and their place in biology, the consequent complete revolution of many lines of thought, the abandonment of old theories and the establishment of new ones, have occurred so recently, and have followed each other with such rapidity, that much confusion exists in the public mind in regard to the subject. It is this confusion which prevents the accomplishment of the practical results which should ensue from this great acquisition to science. On the one hand there exists a morbid fear of the very name bacteria, on the other there is a skepticism quite as pernicious, and it may be said in passing that the unreliable statements of the newspapers are largely responsible for both beliefs. It is by means of our profession that confusion will be transformed into order. A clear knowledge of the life history of these important organisms will go far to rid the public mind of an unnecessary anxiety, as well as to indicate where the real danger lies, and it is the duty of every physician to disseminate practical information in regard to microbiology whenever practicable.

It should be generally known that bacteria are minute organisms belonging to the lowest botanic orders; that each consists of a single cell, so small that it must be magnified 400 or 500 times in order to be observed; that these minute plants have the power of increasing in numbers very rapidly under favorable conditions by simply dividing into two, each half becoming a fully developed organism like the original; that these plants are, like their larger relatives, some useful and some harmful; that many of these plants have the power of taking in food and converting it into a poisonous substance, just as the deadly nightshade, planted in the same soil and inhaling the same air as its cousin, the potato, will convert its food into poison, while the latter is a most useful food; that the poisonous substances formed by the bacteria, when absorbed by the human economy, produce diseases, modified, among other things, by the intensity of the poison, the rapidity of its absorption, and the location of its inception.

From a strictly utilitarian standpoint we may roughly classify bacteria as (1) useful, (2) harmless or neutral, and (3) harmful. Judging from the sensational articles appearing from time to time in the newspapers, one would suppose that every germ is a disease-producer, and that death to all microbes is a result devoutly to be desired; but, as a matter of fact, the vast majority of bacteria (both as to species and numbers) are either harmless or positively beneficial, the destruction of which would be in the nature of a calamity. Perhaps the greatest benefit which we derive from these little germs is their rôle in the oxidation of organic matter. All dead vegetable and animal matter is acted upon by them, and the complex chemic substances of organic life are reduced to simpler compounds, thus rendering innocuous what might be dangerous, or a least unpleasant, and at the same time furnishing those elements which enrich the soil and make possible the harvest. It has been said that without microbes crops would be impossible (Duclaux).

Microchemistry is a prime factor in the cleansing of water. By its action drinking-water which is contaminated with organic matter is rendered perfectly pure by the conversion of dangerous chemic compounds into harmless nitrites and nitrates; it causes the ripening of cheese; it produces the fine flavors of butter as well as some which are not so fine, and it is probable that

at times bacteria are an aid in the digestion of food. At any rate, there are 331 described species of bacteria which are useful, or at least harmless, and only 158 species which are known to produce disease, and comparatively few of these affect the human family (Sternberg). And, moreover, since the conditions for existence of the disease-producing germs are not abundantly supplied, they have, on the whole, a rather hard life-struggle, and it is not wonderful that when the opportunity presents they improve it to the utmost.

It is the harmful germ with which we are most concerned. The useful germ we accept, like air and sunlight, as a matter of course. The harmful germs, after evading every effort to discover them for centuries, are rapidly being isolated, studied, and the influences which are inimical to their continued existence established. It was found that certain diseases, of which typhus is a type, depended for their propagation on the presence of filth. Measures were taken to remove the filth, and typhus disappeared. It is known that typhoid fever, malaria, cholera, and certain diarrheal affections are produced by the presence of germs in drinking-water, and that if such water is boiled these diseases will be prevented. It is known that the sputum of a tuberculous patient, when allowed to dry, may infect others, and that if the sputum is burned the major danger is avoided. It is known that air-borne diseases are, as a rule, carried but a short distance, and that if a patient suffering from them be isolated, and if all discharges and articles of clothing, etc., with which the patient has been in contact are disinfected, the danger of others contracting the disease is comparatively slight. It is known that certain diseases are prevented or modified by vaccination or inoculation; that this acquired immunity is produced by a well understood scientific principle, which is being repeatedly proven. It is known that for pus microbes, as well as others, there is nothing so conducive to their growth as heat and moisture, and that an old-fashioned poultice supplies these conditions most admirably, and that in the discarding of this dangerous agent for the treatment of open wounds, whether infected or not, and in purulent affections generally, much suffering and perhaps some lives have been saved.

These precepts are thoroughly practical, and even a superficial knowledge of the principles of bacteri-

ology will convince the public of their importance, and the necessity of better measures of quarantine; of the enactment and enforcement of laws in regard to isolation and vaccination; of disinfection; of general sanitary cleanliness, including pure food, pure milk, pure water supply, and pure air; matters in which every individual is vitally interested. The more thoroughly bacteria and their effects are understood, the less we will hear of the scoffer, the anti-vaccination crank, and the mob which resists the health officer in the performance of his duty.

The public is beginning to see that the present practice of medicine is founded on science, and it is anxious to know more of it. It is remarkable what an interest people are taking in this scientific basis of medicine. Whether due to the training in science and physiology now common in our public schools or to some other reason would be difficult to decide, but certain it is that there is a wholesome desire for information which the physician should be the last to withhold. He may communicate the fact to his patients that it is unwise to poultice a boil; that it is necessary to disinfect polluted clothing and diarrheal discharges; that it is desirable to boil suspicious water, etc. Let him also explain to them why these things should be done, and in the majority of cases he will find his audience only too glad to listen, and prompt to obey.

ANTHRAX AND THE DISINFECTION OF HIDES.

THE report of an invasion of the dread disease anthrax at Dubois, Pa., calls attention to the constant danger which arises from the importation into this country of hides, wool, hair, and rags. It appears that the Falls Creek Tannery, located at Dubois, Pa., recently received an invoice of 100,000 hides from China. The hides were started through the process of tanning, and the tanning-fluid drained into the creek which ran near by. Shortly after this several head of cattle which drank the water from the creek suddenly died. Five of the tannery employees were violently attacked about the same time, four of whom have since died. Investigation has revealed the fact that the hides were infected with anthrax bacilli, and the supposition is that the fatal casualties have resulted from an infection from this source.

An invasion of anthrax is comparatively unknown

in this country but the disease is not uncommon in England, where it is generally known as "wool-sorter's disease" or "splenic fever." In Austria and Hungary it not infrequently occurs among people engaged in sorting rags, and is known as "rag-sorter's disease." It is readily transmitted by inoculation, the virus gaining entrance through a wound or abrasion of the skin, and very possibly through the mucous membrane of the respiratory tract. The external form of the disease is known as malignant pustule. The incubation period is short, lasting about three days, and the termination is generally fatal.

In certain parts of Russia, Turkey, and Asia, anthrax is endemic. From these countries are imported Persian wool, mohair, camel's-hair, as well as hides and rags. As little is known in these countries of the infectious nature of anthrax, and as little attention would be paid to it even if it were understood, the wool or hair of animals, dead from this disease, is gathered as well as that from healthy animals. Those plucked from dead animals have frequently portions of skin adherent to them. They are known as "fallen fleeces," and, of course, constitute the most dangerous part of the cargo.

Some recent deaths from this disease among the wool-sorters in England called attention to the importance of proper disinfection of imported cargoes of this character, and careful investigations have been made as to the best methods of accomplishing it. It is found that the diseases most likely to be imported through this channel are the bubonic plague, rinderpest, and anthrax.

In studying the life history of the plague bacillus, Koch and the Bombay commission have confirmed what was already known, that the plague bacillus rapidly dies out. It is only by constant re-inoculations and passage through living animals that the germ retains a high degree of virulence. The voyage, therefore, necessary to reach this country from plague infected districts, as has been pointed out by Doty of the New York Quarantine, would probably be sufficient to destroy the plague bacillus or at least to rob it of its virulence. All material in which it could find habitat may be easily disinfected through the agency of compressed steam.

It has also been fairly conclusively demonstrated that the virus of rinderpest readily loses its vitality

or at least its virulence under similar conditions. In anthrax, however, a much more resistant type of bacillus is presented. The spores of anthrax retain their virulence even after lying dormant for years, nor are they affected by ordinary changes of climate and temperature. It requires very high temperature and great pressure to disinfect packages of baled goods. In the case of rags, wool, and hair, this can be successfully accomplished in bulk, but a temperature sufficient to destroy anthrax spores when applied to bales of hides would materially damage the hides.

As no antitoxin has yet been discovered which will nullify the virus of this malignant micro-organism the only safety for those subject to its invasion lies in prevention. Thus, it is seen that a new problem is presented in sanitary science as practised at quarantine stations. It will be well, if the recent outbreak at Dubois stimulates the government laboratories at Washington, and others as well, to renewed experimentation and inquiry into the resistance of this virulent and dangerous germ.

ECHOES AND NEWS.

Typhoid Epidemic at Arverne, L. I.—It is reported that typhoid, in a mild form, is epidemic at Arverne and Rockaway, Long Island.

Death of Professor Humphreys.—The death is announced of Professor Humphreys, of Johns Hopkins University, at Port Antonio, Jamaica.

The Oldest Russian Medical Society.—The oldest medical society in Russia is the Physico-Medical, which was founded at Moscow in 1804.

International Congress of Hygiene.—The Ninth International Congress of Hygiene and Demography will be held in Madrid, April 10 to 17, 1898.

Appointment of Dr. Warner.—Mayor Strong has appointed Dr. L. Frank Warner, of 139 West Twenty-first street, medical examiner of the Civil Service Board.

Tricycle Invalid Chair.—An invalid chair built on the plan of a tricycle, and propelled by a man on the third wheel behind, has been seen in the streets of Baltimore.

A Doctor a Bank President.—The fact that medical men do have business ability is shown in the election of Dr. James Bordley of Centreville, as president of the National Bank of that place.

Tuberculosis in Cows.—According to an investigation recently made by the Board of Health of New York City, 16.2 per cent. of the milch cows within the city limits are affected with tuberculosis.

A Woman President of a Medical Association.—At the last meeting of the Lehigh Valley (Pennsylvania) Medical Association, a woman, Dr. Mary Greenwald of Stroutsbury, was elected president.

The Next International Medical Congress.—The next International Medical Congress will be held at Paris in the summer of 1900. Professor Lannelongue has been appointed president of the organization committee.

Hot Weather and Suicide.—The great heat which has recently been experienced in Italy has caused an unusual number of suicides, especially in Florence, where forty-four unfortunates have taken their lives since May 1st.

Oklahoma Recognizes Homeopaths.—The physicians of Oklahoma Territory are much exercised over the appointment of a homeopath as president of the Board of Health. An effort will be made to have him removed.

The Statue of Darwin.—A bronze statue of Darwin was recently unveiled in Shrewsbury, England. It has been placed in front of the Free Library, which was formerly the old Shrewsbury school where Darwin was educated.

Diphtheria in Australia.—It is reported that diphtheria is prevalent at Melbourne and throughout the colony of Victoria, Australia. Lack of sanitation and disregard of isolation and disinfection are said to be the cause of the epidemic.

Death under an Anesthetic.—A death is reported from Birmingham, England, during the administration of the A. C. E. mixture taken for the extraction of teeth. Evidence showed that the anesthetic was administered by a skilful physician.

Nurse Dies of Typhoid.—Miss Lucy Jordan Kane, a pupil-nurse in the training-school connected with the City Hospital on Blackwell's Island, New York, died there recently of typhoid fever, which she contracted in the performance of her duty.

The Princess of Wales a "Kneippist."—It is said that the Princess of Wales is taking the Kneipp cure at Woershofen. It is possible that the example set by the Princess may be followed by the smart set, and that the Kneipp cure may become a fad.

Children Paralyzed.—A strange disease has attacked several children in Hackensack, N. J., which results in paralysis of the muscles of the throat and, in some instances, of the extremities. In each case the paralysis followed intermittent fever.

Red Cross Bicycle Corps.—A Red Cross corps of wheelmen, gathered mainly from the different cycle clubs, has been organized in Chicago to give first aid to wheelmen who meet with accidents. The red cross arm-band is the official insignia of the order.

Bacteria Incubating Nursery.—The news comes from London, England, that the vestry of the church of St. Pancras has started a bacteria-incubating nursery, where specimens may be sent for the purpose of bacteriologic examination in suspected cases.

Sickness among Montana Miners.—It is reported that the recent heavy rains in Montana have made the silver-mine region knee-deep in mud. Dysentery has appeared among the prospectors living on this wet ground, due to lack of sanitation and the impure water-supply.

War Against Hat-Pins.—The newspapers of London, England, have declared war against the long hat-pins now worn by women. Two instances are reported in which an eye has been accidentally penetrated by a hat-pin in individuals riding in crowded omnibuses.

A Medical Forger.—A Dr. Brewster, said to be a graduate of the Long Island Hospital College, who for some time past has been swindling medical men in the vicinity of New York, was recently arrested for trying to pass a forged check on the Bayonne Hospital at Bayonne, N. J.

Cause of Death of Napoleon I.—That Napoleon died of malignant disease of the stomach is confirmed by a copy of the *St. Helena Guardian* containing the full text of the report of the *post-mortem*, signed by the medical officers who performed it, recently received by the *British Medical Journal*.

Dr. Mosely Appointed Professor of Gynecology.—Dr. William E. Moseley has been elected professor of gynecology in the Baltimore Medical College. He succeeds Dr. Thomas A. Ashby. Dr. Mosely is a Harvard graduate, and received his early gynecologic training at the Woman's Hospital, New York.

Pencil Sterilizers.—The State Board of Health of Indiana has issued an order requiring all schools to be provided with pencil sterilizers and safety drinking-fountains. The former is a Russian iron oven heated by gas, gasoline, or alcohol, in which pens and pencils are to be heated daily to a temperature of 275° F.

Honor Conferred on Professor Toldt.—The honorable distinction of rector of the University of Vienna for the year 1897-98, has been conferred on Professor Toldt, the celebrated anatomist, who has made important investigations on the development of the peritoneum, and published many important works on embryologic subjects.

Deaths in the Profession Abroad.—The following members of the medical profession have died recently: Dr. R. de Martins Periera, professor of morbid anatomy in the Lisbon School of Medicine; Dr. Victor Mayer, professor of chemistry in the University of Heidelberg; and Dr. Dewindt, president of the Belgium Medical Federation.

Hereditary and Continuous Shedding of the Finger-nails.—The case of a man who, since his birth, has been constantly shedding his nails, was recently reported. The man is an otherwise healthy native of Les Basse-Pyrénées, France. His mother and two of her brothers were similarly affected. The shedding occupies about three months, is accompanied by no pain, and new nails take the place of the old.

A Case of Acromegaly.—A case of acromegaly is reported from Chicago occurring in the person of a teamster. He

presents a very strange appearance, his head measuring sixteen and one-half inches from the upper portion of the frontal bone to the chin. His hands measure fourteen inches from the wrist to the finger tips and are longer than his feet, which have not as yet shown the same abnormal development.

A Cure for Hog Cholera.—The agents of the Chicago, Milwaukee and St. Paul Railroad have been treating hog cholera on a farm near Dubuque, Iowa, with a remedy the nature of which is not mentioned, with the result that during the year fully ninety per cent. of the hogs treated have been cured. As three million hogs died of cholera last year in Iowa, the subject is an important one to the farmer who raises them.

Smallpox in Alabama.—The officers of the Marine Hospital Service sent to Birmingham, Ala., to investigate the smallpox epidemic there, report the disease to be genuine smallpox although not of a virulent type. So far it has been confined entirely to negroes. The sanitary arrangements are said to be excellent. An isolated camp has been established, and a hospital located on the mountain-side at a distance from the city.

Attendance at Moscow.—It is officially reported that 7300 members attended the Moscow meeting of the International Medical Congress. Of this number more than 3500 were from Russia, 800 from Germany, the same number from Austria, 400 from France, 300 from Italy, 300 from England, 120 from the United States, 30 from Mexico, 10 from Japan, 4 from China, and the remainder from other portions of the world.

A Scheme to Sell Spectacles.—A man calling himself "Dr. Frank, of the Manhattan Eye and Ear Infirmary of New York," has been victimizing the residents of Orient, L. I., in the following way: After explaining that he was on his way to a neighboring village to perform an important operation, he told several individuals that they were fast becoming blind and advised them to purchase glasses, which he sold to them at a fabulous price.

A Divine Healer.—Another man who calls himself a "divine healer" has arrived in New York, having ridden all the way from Atlanta, Ga., on a bicycle. He claims to cure the sick, the lame, and the blind by a method "controlled entirely by God." He is wholly without education, but attracts many among the poor and ignorant. Although he boasts that he never asks for a fee, everybody is expected to give what he or she can afford.

Responsibility of Charity Bazaar Fire.—Baron Mackan, the principal promoter of the Charity Bazaar, which was destroyed by fire not long ago in Paris with great loss of life, has just been tried for homicide in neglecting to take proper precautions against fire. He was found guilty of imprudence and fined 500 francs. The cinematograph men were declared responsible for the fire and sentenced respectively to one year in prison and 300 francs fine, and eight-months' imprisonment and a fine of 200 francs.

Statistics of Anesthesia.—The statistics of anesthesia collected by Dr. Gurlt of Vienna, have recently been pub-

lished in the *Journal für Zahnheilkunde*. The administrations reported number 58,769, including 27,000 of chloroform, with 29 deaths; about 19,000 of ether, with 3 deaths; 5000 of Billroth's mixture (morphia, chloroform, and alcohol), without a death; and 5890 of chloroform and ether, without a death. During the last two years 32 deaths have been reported, being 1 death in 1836 administrations.

Hospital Car.—A new hospital car is being constructed for the Long Island Railroad. The car is built like an ordinary Pullman, and has the best system of springs and trucks. There are seventeen cots, and, in an emergency, hammocks may be swung from the ceiling to accommodate ten or fifteen more patients. In one end of the car there is a complete operating-room, fitted up with glass-tables, and all modern surgical appliances. The car will be kept in readiness at all times so that in case of an accident, it may at once be despatched to the scene.

A New Source of Zymotic Infection.—A careful investigation by the New York Board of Health has revealed the fact that the cases of malarial fever and sewer-gas poisoning in the district centering about Fifty-ninth street and Madison avenue are due to the pipes of the steam-heating company. These superheated pipes, passing through the soil in close proximity to gas pipes and sewers, keep the earth at a proper breeding temperature for poisonous germs. As the streets are hermetically sealed by asphalt pavements, the only escape for the confined and contaminated air is along the service pipes leading into the houses.

CORRESPONDENCE.

OUR VIENNA LETTER.

[From our Special Correspondent.]

HOTEL ACCOMMODATIONS AT MOSCOW DURING THE CONGRESS—INCREASE OF INTESTINAL CARCINOMA ACCORDING TO MORTUARY STATISTICS—PROFESSOR NOTHNAGEL AND THE INCREASE OF CANCER AMONG ALL CLASSES OF PATIENTS—SOME OPINIONS AS TO THE PARASITIC ORIGIN OF CANCER—TWO CASES OF AUTO-INOCULATION OF GASTRIC CARCINOMA—PRECAUTIONS AGAINST THE INTRODUCTION OF THE PLAGUE.

VIENNA, August 15, 1897.

THE most interesting topic of conversation among medical men here is the arrangements for the Congress at Moscow. The membership-tickets and free passes on the Russian railroads have come and everything promises a very pleasant time. There is one little cloud on the horizon, however, and as a number of Vienna medical men attended the International Congress at Rome three years ago, it looks darker to them than to the untraveled. Those who have received notices that rooms have been reserved for them, as requested, say that charges are very high. To an American who realizes that, as a rule with us, during such assemblies special rates at hotels are given to members of the associations, it seems hard that there should be a considerable advance in price on such an occasion. This seems to be the general expectation

here, however. As hotel accommodations in Moscow, despite its population of more than three-quarters of a million, are rather limited, it is possible that there may be some inconvenience experienced in securing comfortable lodgings, and rates will be correspondingly high. This may really be only a false presentiment, however, such as is liable to occur when a journey into the unknown is contemplated. The committee of arrangements has given complete satisfaction so far by its management of things, and it is more than likely that every effort will be put forth to show the visitors that the much-lauded Russian hospitality is not an empty phrase.

Here, where every interesting fatal case comes to autopsy, one of the most striking things in the section-room is the comparative frequency of intestinal cancer. Every ten days or two weeks at least one case of the disease turns up. Professor Nothnagel, in the last clinic of the year, called attention to the fact that the frequency of the occurrence of cancer seems to be on the increase, but that this is especially true of the intestinal form. That this is not apparent but real is proved by the statistics of the Pathological Institute of the General Hospital. During the twelve years from 1870 to 1881, inclusive, one hundred cases of cancer of the intestine were reported *post-mortem*, while during the twelve years from 1882 to 1893, the number had risen to 242, nearly $2\frac{1}{2}$ times as many. This is a startling increase and might be thought to be due to other factors, besides increased frequency of the affection itself—to more careful diagnosis for instance, to the fact that more cancer patients came to the hospital, as the prejudice against hospitals on the part of the poor has been gradually becoming less during these later years, or to the retention of more cancer patients until the fatal termination, or even to such extraneous considerations as change in the character of the patients who have come to the hospital, or to an increase in their number. All of these Professor Nothnagel excluded. He has been connected with the hospital in important capacities during all of these years, and he is sure that the character of the patients is not different from what is used to be. The number of patients has not materially increased, and their period of retention is about what it used to be. The conclusions from the mortality statistics are confirmed by the fact that a corresponding increase of the number of all patients in whom intestinal cancer was diagnosed, including those, therefore, who did not die in the hospital, has also taken place. A fair proportion of cancer cases when it becomes evident that the affection is hopeless prefer to die at home, and so do not enter as a factor of the mortality statistics.

It is not alone in hospital cases, however, that this increase of intestinal cancer has taken place, for it is not confined to the poorer classes. Professor Nothnagel recalled a private conversation with the late Professor Billroth during 1893, in which they were in accord in thinking that a startling increase in the number of cases of intestinal cancer in their private practices had also taken place.

The increase noted—*post-mortem*—during the twelve years from 1882 to 1893 has continued since, and every

year the number grows larger, so that the next twelve years promise to show a still larger number, actually and comparatively, of deaths from intestinal cancer. The same condition of affairs obtains also for cancer in general. The increased frequency of cancerous affections has, of course, been reported elsewhere. In England attention was called to it several years ago. The German statisticians have shown that cancer is also seemingly on the increase in many parts of their country. Recent French statistics point to the same conclusion. Most statistics, however, included so heterogeneous a collection of cases that their value could be impeached by such considerations, as that better diagnostic methods and more faithful reports have added to the number of recorded cases, but that the affection itself was probably not more frequent than formerly.

These Vienna statistics, however, would seem not to be open to these objections, and are not the result of a series of cases collected for the purpose of proving or disproving a theory. They are simply the report of *post-mortem* findings covering many years, where the same methods of examination always obtain. It would seem to be beyond cavil then, that cancer in its worst form and in a situation where least can be done for it with reasonable hope of success, is becoming startlingly more frequent among all classes of patients.

With a field like this for investigation of the etiology of cancer one is surprised not to find more new theories as to its probable origin. They cling very conservatively here to the older explanations, such as they may be, and only turn to a new theory occasionally when some one else has been bold enough to advance it, and then but to show its falsity. While most of the medical world is gradually coming to the opinion that the cause which produces a malignant multiplication of epithelial elements is parasitic in nature, most of the authorities on pathology here shake their heads very dubiously, and say they find no reasons for holding such an opinion. Professor Metschnikoff at the Pasteur Institute definitely asserts his belief in the parasitic origin of cancer, and considers that it will be found to be a form of protozoön. The Italians have been interesting themselves lately in the theory that it is a blastomycete, a form of yeast, and I saw, through the kindness of Dr. Roncalli in Rome, a series of specimens which illustrate the theory very beautifully. The readiness with which articles discussing a parasite of cancer are accepted by the German medical journals generally is an index of what the German trend of thought in regard to the subject is. Despite all this one hears very little of the parasitic theory here.

Professor Kollisko in a recent demonstration showed two very interesting cancers of the stomach, where it was evident that there had been auto-inoculation. On the posterior wall of the stomach in each case was a cancerous nodule about the size of a walnut. On the anterior wall, but separated from the first by an inch or more of healthy tissue was a second, smaller nodule. The second was evidently not a metastasis; much less was it due to any infiltration in the continuity of the tissues. The anterior wall in both cases, while the stomach was empty,

had collapsed against the site of the nodule on the posterior wall, and the abnormal pressure so set up had caused slight injury to the mucosa, at which place there occurred an infiltration of cancer-cells from the superficial portions of the primary growth.

Such an occurrence has been described before, and is just such another condition as occurs under similar circumstances when both lips become affected with cancer, or two adjoining skin surfaces, as the folds beneath the breast, become successively infiltrated as the result of contact. The condition has been used with supposed effect as a proof of the contagious nature of cancer, and as all contagion of which we know is of parasitic origin, it follows that this condition may be taken to indicate the presence of parasites.

Professor Kollisko showed that it was merely a transference of epithelial elements already predisposed to atypical overgrowth—a true metastasis, not through blood or lymph, but from tissue contact. As in ordinary metastasis it is, as a rule, an overgrowth of transferred elements which occurs, not the irritation of a new focus causing cancerous degeneration, and so the question would seem to remain where it was years ago when the original theories of cancer etiology were advanced.

Despite the fact that the Government Pest Commission reported that there was little chance of the introduction of the pest into Europe, since the contagion is not carried in fomites, a conclusion with which the German Commission fully agreed, the health authorities consider it necessary to take special precautions. For this purpose Professor Weichselbaum, the official pathologist, has been asked to furnish the data necessary for the immediate recognition by health inspectors of the pest bacillus in suspected cases. He has also been asked to open a course at the Pathological Institute, in which the peculiarities of the bacillus will be practically demonstrated, so that cases may not escape detection at the very beginning should they occur, and so prevent the possibility of an extensive infection.

SOCIETY PROCEEDINGS.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-fifth Annual Meeting, Held at Montreal, August 31 to September 3, 1897.

[Special Telegraphic Report to THE MEDICAL NEWS.]

GENERAL SESSION.

FIRST DAY—AUGUST 31ST.

NEVER did the British Medical Association convene under brighter skies or with more cordial surroundings. The internal conditions of the gathering are fully in accord with the environment; for the body of members from the mother country is large, the American profession has freely responded to the invitations courteously extended by the local committee, and the Dominion members swell the tide, until, at the close of the first day, some 1600 are recorded as in attendance, a number which compares favorably with that usually found at sessions held within the sacred limits of the "Little Island," which

nearly all now in attendance regard as the "old home country," either directly or ancestrally.

The session was opened after the old fashion by a special service in the great Christ Church. It was a most graceful and impressive ceremony on the part of the Association, and to the anthropologist a pleasing reminder of the common lineage of the two great professions, theology and medicine. To observe a congregation made up two-thirds of men was in itself impressive, and the beautiful music, and the appropriate sermon by Bishop Domoulin made the occasion one long to be remembered.

Early in the afternoon the delegates and guests filled the large auditorium, Windsor Hall, to overflowing to listen to the speeches of welcome and the President's address. (See page 289.) The platform was occupied by the speakers and other celebrities, among whom were Lords Mount Royal and Lister, Sir William Hingston, and Dr. Charles Richet of Paris. It was an enthusiastic audience, especially in its loyalty, every reference to the mother country, the Queen, and the glories of Canada, being applauded to the echo. But no single burst of applause exceeded that which greeted Dr. Roddick's graceful tribute to Lord Lister. The President of the Association, Dr. T. S. Roddick of Montreal, introduced the Mayor of the city, who cordially welcomed the delegates. He was followed by Sir Adolphe Chapleau of Quebec, who, in eloquent and impressive language re-echoed the former speaker's words of welcome. The Earl of Aberdeen, Governor-General of Canada, then, as he expressed it, thrice welcomed the members of the Association to its first place of meeting beyond the confines of the British Isles, and in a brief but witty speech made every one feel that his welcome was a personal as well as an official one.

At the close of Dr. Roddick's address Lord Lister moved a vote of thanks and took occasion to compliment the Canadian members upon their lovely country and healthful climate, which made it seem to him one vast health-resort. He sympathized with the President with reference to the difficulties of medical legislation regarding license to practise, and expressed a preference for the English method, in which teachers are represented in the examining-boards, as freest from objections. He begged to express the gratitude of the members of the British Medical Association for the cordial welcome and magnificent hospitality extended to them. Sir James Grant of Ottawa seconded the vote of thanks.

The secretary, Dr. Adami, then read the names of the delegates representing the various branches of the Association throughout the empire, and from the various State and National societies of the United States, and each delegate came forward in turn and was presented to the president, and by him to the Earl of Aberdeen. The address of the president completed the session.

A trolley ride around the city was then indulged in, and, later, a reception by Dr. Roddick and his daughter was held in the handsome rooms of the Art Gallery. One of the pleasantest events of the day was the dinner tendered to Lord Lister by the Medico-Chirurgical Society of Montreal. About three hundred members and guests were present, and at its conclusion the president of the

Society, Dr. George Wilkins, presented the guest of honor with a bound, illuminated Address expressive of the esteem in which his great discovery of antiseptis is held by the profession. In accepting the gift, his lordship expressed in a few well-chosen words his appreciation not only of the Address itself but of the kindly feeling which had prompted its preparation.

In the evening a reception and *conversazione* was held at Laval University, after which PROFESSOR CHARLES RICHTER, delegate of the French Government and of the Faculty of Medicine of Paris, delivered in French an eloquent address upon

THE WORK OF PASTEUR AND THE MODERN CONCEPTION OF MEDICINE.

The speaker clearly set forth the change which has been wrought in placing the practice of medicine on a purely scientific basis. The credit of this is largely due to Pasteur. Upon his discoveries rests the entire structure of experimental medicine. The logical succession of events in Pasteur's work were traced in a graphic way from the first discovery of the biologic basis of fermentation to the demonstration of the principles of immunization by attenuated virus.

The great fact of the generation of germs was absolutely unknown before Pasteur. The inoculation of liquids with spores and the method of sterilization was revealed to us by Pasteur. It is the nature of great discoveries that they become popularized quickly and thus become elementary. A first-year's medical student knows perfectly that which neither Lavoisier nor Leibig, nor Férmy nor any one before Pasteur had been able to perceive. Great discoveries fall rapidly within the domain of common knowledge; they become so simple that they cease to surprise us.

It is true that Pasteur did not discover all the microbes of all contagious diseases, but this is of small moment, since he was the first to discover that infection was a phenomenon of microbial parasitism. All those who after him have proved points of detail, however important or fundamental they may be, have but followed the path traced by the master. Whether they will or not, they are all the pupils of Pasteur, as those who follow the study of chemistry are pupils of Lavoisier.

The greatest of Pasteur's disciples, Robert Koch, although with some ingratitude he refuses to recognize his master, has only perfected certain points in technic and applied his ingenuity and his perspicacity to the solution of questions which in spite of their practical importance are still secondary. He has not, in fact, been able to do anything new except upon points of detail, all that is essential comes from Pasteur himself.

It need not be said that this idea of the microbe, of the parasite, has become the basis of medicine. If we take up treatises on pathology written before this prodigious revolution, we shall be astonished by the insignificance and the nothingness of these very ancient books. Yet they are not really very old, they are dated 1875 or 1880, but as one reads them it seems as though several centuries must have intervened between these venerable writings and modern books.

In ten years medicine has been entirely overturned and re-made. It is being re-made every day. Every day brings some new discovery in matters of detail, but the great principle is always there, and it must always be attributed to the one initiator.

Fermentation, infection, contagion, vaccination; here in four words we have the work of Pasteur. What more need be said? Do not these four words possess, in their simplicity, unequaled eloquence?

Can any one longer maintain that the progress of medicine is not due to experimental science? Does not all this knowledge of microbes and of the part which they play in disease imply, immediately and necessarily, immense progress in therapeutics?

Pasteur was spared to take part in the triumph of his ideas, and to be a witness of his own glory. If, like so many creators, he had sometimes in his earlier days known conflicts and hatreds and petty quarrels and foolish objections, nevertheless he had not to deplore the ingratitude of mankind. He died full of honors, surrounded by admiration, respect, and love.

And now let us turn back to consider the indisputable union of medicine and science. This, in fact, is what ought to strike us in the work of Pasteur. It is not only in general biology and in the progress of our knowledge that his work is great, it is still more in its immediate practical applications. The great biologists of our century, Lavoisier, Claude Bernard, Darwin, have, without doubt, left behind them work which, by reason of its conquests of new truths, is not inferior to the work of Pasteur, but these new truths do not lead to any such immediate application as antiseptis, the treatment of hydrophobia, anthrax, vaccination, or the prophylaxis of infectious diseases. Pasteur was not only a man of science, he was also a benefactor, and there is scarcely one who can be compared with him as a benefactor of suffering humanity except Jenner, who found out how to preserve thousands and thousands of human beings from the most hideous of diseases.

Serum-therapeutics is a direct sequence of the labors of Pasteur. This is a mode of treatment born of the experimental method alone. Here again science has done for the art of medicine that which clinical observation, left to its own resources, could never have accomplished.

A German experimenter, Behring, after studying the effects of the serum of refractory animals upon diphtheria, showed (in 1892) that this serum is wonderfully efficacious in the treatment of the disease. He applied the serum method of treatment not only to diphtheria, but also to tetanus, and, at first in animals and afterwards in man, he obtained results which were really marvelous. Gentlemen, you know the rest, and I need not tell you that this serotherapeutic method, improved and popularized by Roux in 1894, is now a treatment without compare. The statistics on this head are absolutely conclusive. The mortality of diphtheria, which was forty-five per cent., has fallen to fifteen per cent. That means for the city of Paris alone an annual saving of about 1000 human lives; for the whole of France, nearly 10,000 lives. We may take the same proportion for Italy, Germany, England,

the United States, Canada, and Russia, and may estimate the number of infants which serum-therapeutics annually snatch from death at about 50,000.

The last word has not yet been said about serum-therapeutics. The organism is endowed with a marvelous power of resisting the poisons secreted by microbes. It sets to work in its turn to secrete counter-poisons which neutralize the poisons secreted by the microbe. The antitoxins of the organism combat the toxins of the parasite, and in the future the art of serum-therapeutics will be to seek in these resisting organisms the antitoxins fabricated by their cells.

Thus on whatever side we turn we find that medicine has always been guided by experimental science. By experiment and by science it is compelled to march forward. This was true in the time of Harvey, for that immortal physiologist had to meet the opposition of physicians. This was true also in the time of Lavoisier, when by a few decisive experiments he proved the chemic nature of the phenomena of life. But how much more true is it at the present time since Claude Bernard, and above all Pasteur, have by experiment laid open a whole world and have warranted us in conceiving the widest hopes for the future of medicine.

The part of the man of science and of the physician are very different. The physician ought to be conservative, applying methodically the teachings and precepts which he has received. He has no right to experiment upon his patients, or to permit human life or human suffering to be risked on fantastic theories. But the man of science ought to be a revolutionist. He ought not to be content with the doctrines which he has been taught. The opinion of the master ought to be but a light weight upon his mind. He should seek on every hand for facts which are new and even improbable. Darwin says somewhere that he had made the experiments of a fool, and often it is right to attempt that which appears contradictory to all established and classic opinions. Without this spirit of adventure, without this scientific daring which opens up new horizons there is no progress.

The task of the explorer or of the pioneer is not that of the physician. He ought to be careful to keep himself abreast of all scientific progress in order that his patients may have the benefit of it, but he cannot advance the progress of science, save within restricted limits. Having no right to experiment he is almost powerless to solve the difficult problems which arise.

It is the duty of the chemist, the physicists, and above all the physiologists, to guide medicine into the new ways. They have not to take the heavier responsibility of a human life upon their shoulders, and nothing should check their audacity. You, gentlemen, have not the right thus to be audacious; you need prudence and moderation, and, convinced as I am of the power of experimental science, I still think that the applications which the chemist or the physiologist suggests to you should only be accepted with considerable caution. It costs us nothing, after a few experiments which have succeeded fairly well, to say to the physician, "Try that on your patients," knowing very well that our responsibility is

nil, and that the ancient axiom *primo non nocere*, an axiom which ought to be your strict rule of conduct, does not in any way apply to us. You see, therefore, that it would be unjust to make it a matter of reproach to physicians and surgeons that they have not made great scientific discoveries. This is not their mission. It is theirs to relieve human suffering and to seek among new scientific truths that one which is most proper to relieve or to cure the sick.

SECOND DAY—SEPTEMBER 1ST.

The event of the afternoon was the Address in Medicine by DR. WM. OSLER of Johns Hopkins University, Baltimore, (see page 293), whose selection for this honor was a most graceful compliment to the entire medical profession on this side of the line. He commanded the closest attention, and was often interrupted by demonstrations of approval. At the close of the address the honorary degree of LL.D. was conferred by McGill University upon the following members of the British Medical Association: Lord Lister, Sir Wm. Turner, Sir Walter Foster, M.P., Professor Michael Foster, Dr. Henry Barnes, Mr. Christopher Heath, Dr. R. Saundby, Mr. C. G. Wheelhouse, Dr. W. H. Gaskell, and Professor Alex. McAlister, and upon Professor Chas. Richet of Paris, France. The degrees were presented by the Chancellor, Lord Mount Royal. At four o'clock in the afternoon a large party made the celebrated trip through the Lachine rapids, while others of the members attended a charming garden-party in the grounds at the Royal Victoria Hospital. In the evening a reception was tendered the Association by "The Man Who Owns Canada," Lord Mount Royal and Baron Strathcona (since the Jubilee), better known as Sir Donald Smith.

SECTION IN GENERAL MEDICINE.

FIRST DAY—SEPTEMBER 1ST.

DR. STEPHEN MACKENZIE of London, England, the President, opened the Section with a review of the progress of medicine since the establishment of the British Medical Association. He complimented the profession upon the fact that the progress during recent years has been as beneficial in the prevention and treatment of disease as it has been scientific and rational in character.

DR. JAMES STEWART of Montreal opened the discussion on the subject of

ARTHRITIS DEFORMANS,

basing his observations on forty cases treated at the Royal Victoria Hospital during the past four years. Thirty per cent. of the male patients had a history of gonorrhea. He discussed the relation of rheumatoid arthritis to rheumatism, nervous diseases, and tuberculosis. One-third of the patients gave a history of antecedent acute or sub-acute rheumatism, and these cases would seem to have been a transition or development from that condition. He believed that evidence is accumulating to show that both ordinary rheumatism and rheumatoid arthritis are of microbic origin. He did not think there is any specific causal relation between rheumatoid arthritis and nervous or tuberculous disease other than the fact that the de-

pression incident to these diseases will predispose and lessen the resistance of the system to this or any other infection. During the past nine months he had employed superheated air baths, with good results, in the treatment of rheumatoid arthritis, in some twenty cases, at the Royal Victoria Hospital.

DR. H. HANDFORD, Nottingham, England, claimed that rheumatoid arthritis is purely an arthritis and has no relation whatever to rheumatism. The frequency of antecedent gonorrheal infection, as noted in the cases of Dr. Stewart, would argue in favor of a pyemic infection of the joints in this disease. He believed the affection to be of microbic origin. He had found that carbonate of guaiacol gives good results in the acute stages. Dr. Lindsay of Belfast, Ire., was a firm believer in the intimate relation between ordinary rheumatism and rheumatoid arthritis, and he relies chiefly upon tonic treatment in both diseases.

DR. WILLIAM OSLER of Baltimore referred to the atrophic nerve changes which frequently follow and possibly result from the disease.

DR. A. JACOBI of New York maintained that there is a distinct pathologic difference between polyarticular rheumatism and rheumatoid arthritis, inasmuch as in the former the lesions are confined to the synovial membrane and in the latter to the cartilages, this fact alone constituting a dividing-line between the diseases. He thought both diseases may be best studied during childhood. His best results have been obtained from the long-continued use of arsenic.

DR. J. C. WILSON of Philadelphia would confine the term "rheumatism" to cases with arthritis lesions only.

DR. F. C. SHATTUCK of Boston had found concealed suppuration a very frequent starting point of rheumatoid arthritis.

DR. MOOREHOUSE of London, Ontario, adhered to the theory of the intimate relation of rheumatism and rheumatoid arthritis, and has found supportive treatment, cod-liver oil, etc., valuable in both conditions.

DR. J. E. GRAHAM of Toronto drew attention to the difficulty of differentiating this disease from gouty conditions. Arsenic has given the best results in his hands.

DR. GRIFFITHS of Swansea, Wales, looked upon the disease as a development of various deleterious conditions, such as shock, bad food, and ventilation; not as a disease *per se*, but rather as a result of certain local influences. Accordingly, the rational treatment should vary with the general indications so as to combat the exciting or predisposing causes.

DR. V. P. GIBNEY of New York referred to the necessity of putting the joints at rest by mechanic appliances during the stage of exacerbation, and subsequently regulating the degree of movement when resolution appeared to set in. By this means relapses from trauma will be prevented.

DR. JAMES TYSON of Philadelphia believed in the microbic origin of the disease.

The PRESIDENT expressed his pleasure at the freedom with which divergent views had been advanced, and believed that ultimately, as a result of independent investi-

gation, unanimity of opinions as to the character of this obstinate disease will be attained.

DR. TYSON then read a paper on

THE PROPER USE OF TERMS TO DENOTE MYOCARDIAL CHANGES.

DR. J. T. WHITTAKER of Cincinnati, and DR. N. S. DAVIS of Chicago discussed the paper. The latter emphasized the utility of the terms "cardiac fatigue" and "cardiac exhaustion" in relation to the chemic and anatomic changes incident to these conditions.

DR. M. H. FUSSELL of Philadelphia reported two rare cases of hemophilia occurring in children of the same family, having a hereditary (paternal) history. Bleeding of an alarming character would result from the slightest injury, and prolonged epistaxis without cause was a frequent occurrence.

DR. ACHESON of Galt, Ontario, read a paper on

ATONY OF THE RECTUM.

differentiating it from chronic constipation due to mere impaction, and condemning the too frequent use of enemas, especially of warm water.

SECTION IN SURGERY.

FIRST DAY—SEPTEMBER 1ST.

MR. CHRISTOPHER HEATH of London, the President of the section, delivered the annual address, entitled

ON THE TEACHING OF SURGERY.

The speaker expressed the honor he enjoyed in presiding over the section, and especially over colleagues of such eminence as were represented by the vice-presidents of the surgical section. He also acknowledged the pleasure felt in meeting the Canadian members of the profession, as well as those medical brethren from the United States who attended the meeting, and he trusted that the deliberations of the section would not merely advance the science of surgery, but would cement those bonds of fellowship between the members of a united profession, which a common Anglo-Saxon origin should foster and maintain.

After dwelling somewhat at length upon the remarkable strides taken by abdominal surgery during recent years, the speaker turned to the subject of modern anatomic instruction. He said, "I am told by those who are now teaching anatomy that it is difficult to get the student to make a neat dissection, because he can find in the various museums, and notably at the College of Surgeons of England, such beautiful preparations in spirit that he prefers to study from them or from pictures rather than to laboriously extract the details for himself. If this be true, I can only regret that the present race of students is so shortsighted, for without a working knowledge of human anatomy I can conceive of no progress in surgery. I regret to find that, in Great Britain at least, the teaching of anatomy is gradually getting more and more into the hands of professors who are anatomists but not surgeons, and that their tendency is to lay stress upon transcendental details rather than surgical relations."

The speaker asked, Are we not overdoing the scientific teaching of a man who has, after all, to get his living as

a practitioner of medicine, surgery, and midwifery? When the medical curriculum was lengthened by a year it was hoped that the additional time would be devoted to clinical work, but he feared that such is not always the case. He disclaimed it as his intention to decry the modern methods of teaching medicine in the wards of the hospitals, and he praised the practical methods of teaching percussion and auscultation, and spoke of the time consumed in the other departments as leaving but little place for surgery; he lamented that so small a portion of the course is devoted to this important branch, and all of which is in contrast to the fact that there never has been a time of such great surgical activity as now.

In conclusion he said, that "still the great foundations of the art of surgery remain unshaken. Without a knowledge of anatomy, pathology, and histology progress in surgery is impossible, and it is for those who hold the important positions as teachers in the great medical schools to insist that each and every student be provided with a foundation of scientific and practical training, if they are to become the surgeons of the future."

The President then introduced the topics selected for general discussion at this meeting, *viz.*: Appendicitis, and Cancer of the Rectum.

APPENDICITIS.

The opening paper was by DR. G. E. ARMSTRONG of Montreal, who said that the introduction of this subject would give opportunity for English and American surgeons to compare their rather widely different views on this widely discussed topic. The paper was based on 517 cases occurring in the Royal Victoria and Montreal General Hospitals, mostly in patients from twenty to thirty years of age, there being about two males to one female. With respect to the etiology of appendicitis, it is only to be said that anything which destroys the epithelial lining may produce inflammation. Doubtless, stercoral ulcers are responsible for many cases. Before 1889, these patients were all admitted to the medical wards, but since then to the surgical. In these 517 cases, the mortality was 12½ per cent. An operation was performed in each instance. One hundred and fifty-two cases gave a mortality of 23 per cent., about twice that of the cases as now treated. Of these 517 cases, the mortality of those not operated upon was 3.12 per cent.; those operated upon in the acute stage was 20 per cent.; those operated upon in the interval all lived. Sixty-five fatal cases were septic and tubercular; peritonitis, with abscess of the liver, etc., caused the death of 61. Septic pneumonia and Bright's disease were responsible for death in 2 instances.

In the case of several patients with "idiopathic" peritonitis who died no lesion could be found at autopsy, and a similar case occurred in a woman who went skating during a menstrual period, so that the term "idiopathic" cannot be banished altogether. The best time to operate is a difficult question to settle. In some cases the attack is so mild that no operation is necessary; in others the condition is so grave that no operation can give relief; but the great majority of cases are now seen between these extremes. The cautious surgeon will operate early, only the bold and

reckless will advise delay. A case was mentioned as occurring in a young professional man, which progressed six days, with scarcely any symptoms. He was forbidden to get up, but did so, and going to the water-closet ruptured a pericecal abscess, and in spite of almost immediate operation died of septic peritonitis. The rule is to urge operation if all symptoms are not much improved after twenty-four or thirty-six hours have elapsed, and if the patient is not very much better by the third day there is every reason to operate. In general septic peritonitis, thorough washing with hot normal saline solution is non-irritating, and is successful in removing the pus and fibrin. Three large drains, one in each loin and one in the pelvis, will prevent accumulation of fluid.

In localized abscesses, the removal of the whole of the abscess-walls gives the best results for several reasons. In the first place, this procedure avoids the not too rare danger of leaving other abscesses undiscovered. Another reason is that septic material is in this way removed from the mesenteric and omental veins. This avoids the danger of poison proceeding to the liver or spleen, and the production of secondary abscesses. In a hospital, the peritoneal cavity can be so protected with gauze, etc., that there is virtually no danger of a general peritonitis being produced by this radical treatment, while in private practice it may be necessary for the surgeon to content himself with evacuating, cleansing, and draining the abscess.

DR. J. WARD COUSINS of Southsea, Wales, freely endorsed Dr. Armstrong's statement that no special set of symptoms will surely indicate the course appendicitis will take. No statistics will help at the bedside, where each case must be studied by itself. In the cases which recover without operation, the pain first disappears, then the distension, and later the tenderness. The induration does not point with any reliability to the direction in which the abscess is proceeding. If there is the smallest increase of pain, operation is indicated at once. In order to get the best view of the cecal region after the incision has been made, the introduction of a couple of silk sutures through the edges of the wound is far better than the use of retractors. Contrary to the advice of Dr. Armstrong, the speaker believed in carefully wiping out and draining an abscess, without breaking down its walls. He never irrigates, never pulls out the intestine, and opposes the use of drainage-tubes.

DR. C. B. BALL of Dublin said that there are three classes of cases in which operation was agreed to by all: (1) When peritonitis has already developed; (2) when abscess has definitely formed; (3) when repeated attacks have rendered life a burden. In other cases, even during the first attack, there is a very wide difference of opinion as to the value of operation. The speaker cited an instance in which a patient who was doing well for several days died very suddenly from perforation. Such cases, he said, are decidedly rare, and most patients recover without operation. In a great majority the first attack is the last.

MR. JORDAN LLOYD of Birmingham, England, said that it would simplify matters if one were able to divide all cases into (1) appendicitis, strictly speaking, in which

the inflammation is confined to the appendix, and (2) those in which the peri-appendicular tissues are involved. He considered the swelling a most reliable guide to the position of the tip of the appendix, an organ whose length and location varies much in different individuals. In some seven or eight cases in which a long appendix had caused a pelvic abscess, the reader had imitated what frequently occurs spontaneously, and drained the abscess into the rectum in men, and the posterior vaginal cul-de-sac in women. In opening abscesses through the abdominal wall, he hesitates to employ the radical treatment advocated by Dr. Armstrong, but treats the abscess as gently as possible. Iodoform gauze makes a much better drain than either rubber or glass.

DR. WILLIAM HINGSTON of Montreal agreed in this opinion. He also expressed his satisfaction at hearing one speaker object to the advocacy of so serious a thing as an operation to establish a diagnosis. Men are sometimes too slow to see a way out of a difficulty by any other than an operative route. He has operated in only about one out of ten cases of appendicitis, and has never had occasion to regret not having operated in the other nine. If it is most satisfactory to operate for the benefit of a patient, it is still more so to bring a patient safely through a serious illness without an operation.

DR. ALBERT VANDER VEER of Albany insisted upon the importance of observation of the early points in an attack of appendicitis. He indorsed the plan suggested by Dr. Armstrong for the thorough removal of all infected material about an abscess. McBurney has laid too much stress upon a particular point of tenderness; this may not be found and much valuable time be lost. Statistics are valuable in many ways, but each surgeon must depend more upon statements made to him by the particular physicians who call him in consultation. Cases also vary in different seasons of the year. In cases of general peritonitis some good results have been obtained from wiping off the intestines with gauze, etc., but the greatest improvement in results is to be hoped for from getting into close touch with the family physicians, so that they may be able to present a patient for operation at an early stage.

DR. HUGH FERGUSON of Chicago said that appendicitis is almost exclusively a surgical affection, and that the cases which are not surgical are very rare. It is a good rule not to operate at the climax of an acute attack, as the results are better when the operation is done either before the inflammation has reached its height, or during its decline. In all recurrent cases operation is clearly indicated, as no one can tell when an attack may supervene and prove fatal. Between attacks the McBurney incision, separating the fibers of the muscles longitudinally, so as to avoid subsequent hernia, is recommended. In the case of abscesses, the speaker objected to the practice of breaking down adhesions in the search for the appendix. During the early stage it can almost always be readily found; later, it is better not to hunt for it. Flushing out the cavity gives better results than mopping with gauze. In septic cases, when the patient seems likely to die from absorbed poison, saline transfusion has been tried, with unsatisfactory results.

DR. S. C. GORDON of Portland, Maine, believes in treating appendicitis in the beginning, medicinally. It is a beginning peritonitis, and in ninety per cent. of the cases a saline cathartic will carry the patient safely through an attack. Operation is to be recommended in these cases after the acute attack has passed. The objection has been made that the vomiting prevents the administration of a saline. Usually, two Siedlitz powders, or a concentrated solution of Epsom salts, may be taken; if not, the latter with glycerin may be administered by the rectum, and a movement of the bowels obtained. If after the bowels have acted, the temperature continues to rise, an operation must be performed. Generally, in these cases pus is found. Morphin should never be given for the pain. It is better to suffer agony than death, and if the doctor remains by his patient's side, and administers a saline in a hot concentrated solution, it is gratifying to see how rapidly pain will subside. To rid the bowel of the accumulated fecal matter is of great advantage in the case of a patient who is to be operated upon later. A certain number of patients are bound to die from the first, no matter what is done.

The PRESIDENT expressed his satisfaction at hearing the expression of Dr. Gordon's sentiments, which coincided with his own. In a number of cases he had refused to operate upon patients, who subsequently recovered. The pain can be relieved by painting the region of the cecum with belladonna, and then, if necessary, covering this with a good old-fashioned hot flaxseed poultice. The patient should be kept in bed just as carefully as though suffering from typhoid fever.

DR. ARMSTRONG, in reply, said that he has tried drainage with gauze in every way that had ever been advocated, and he had never been able to get it to drain pus. He has repeatedly found pus at the end of a gauze drain which it refused to draw up. A large glass drain is much more satisfactory. He also uses poultices and finds them of great advantage in relieving the pain.

DR. A. E. GARROW of Montreal then read a paper upon

VENTRAL AND UMBILICAL HERNIA IN THE SAME PATIENT,

a very rare condition, at least judging from the published cases. In his case the ventral hernia contained the cecum, appendix, small intestine, and omentum, while the umbilical hernia contained only a single knuckle of small intestine.

DR. ALEXIS THOMPSON of Edinburgh spoke of stricture of the intestine as a sequel of strangulated hernia. If the obstruction is due to peritoneal adhesion, causing a kinking, the symptoms will be more acute, while if it is due to a band, they will come on more gradually. A man who had had an inguinal hernia for several years, and in whom strangulation had existed for three days was found with viable strangulated bowel, which was therefore returned *en masse*. Two or three weeks later the symptoms of obstruction rendered further operation necessary. There was found an omega-shaped loop of bowel adherent to the anterior abdominal wall, and with two

constrictions, the one above being especially close and hard while the intestine above it was enormously distended. An artificial opening was made above this, and three weeks later, when the distended gut had resumed its normal size, the affected loop, measuring 17 inches in length, was removed and the two ends brought together with a Murphy button. This was passed on the fifty-first day and the patient entirely recovered. Histologic examination showed the mucous lining of this upper stricture to be entirely atrophied throughout a distance of 2 c.m. (1 inch).

DR. H. O. MARCY of Boston read a paper, entitled

THE SUTURING OF WOUNDS.

He spoke first of the desirability of closing the wound permanently at the end of an operation. To do this one has to use a suture which will perfectly coapt the surfaces of the wound and at the same time is susceptible of absorption. The use of animal ligatures in wounds had for many years been employed with success before it occurred to the reader to employ such material as tendons, thus abandoning the dangerous use, in all aseptic wounds, of drainage-tubes. Catgut, however prepared, soon becomes weak and soft when buried in the tissues. Tendons have not this disadvantage, and the tendons of the cariboo and moose, and, later, the tendons of the tail of the kangaroo, have been successively tested and advocated. Of all methods of suture, the uninterrupted suture gives the best results, and each plane should be sutured by itself. An over-and-over glover's stitch is not as satisfactory as an in-and-out suture, each stitch being made to enter the tissues exactly opposite to where the last comes out, so that the thread crosses the wound at right angles.

DR. LANGLEY BROWN of West Bromwick detailed a case of traumatic aneurism of the internal maxillary artery, treated by ligature of the common carotid artery. A man, aged thirty-two, was kicked in the head by a horse, the right side of the face being badly lacerated, and the lower jaw broken in two places. The wounds suppurated and abscesses had to be opened in the face and neck. On the fifteenth day after the accident there was an aneurism in the cheek. Later, there were several dangerous hemorrhages into the mouth and neck. Two weeks later, the common carotid was tied, the aneurism subsided and recovery was complete.

MR. JORDAN LLOYD in such cases advocated the ligature of the external carotid, which is not a difficult operation.

DR. JOHN ASHHURST of Philadelphia thought that in most cases of traumatic aneurism the proper treatment is to cut down directly upon the wounded vessel, though in cases complicated by suppuration, this is a plan which has to be modified. Brain complications after ligature of the carotid are not to be feared.

THE PRESIDENT mentioned one case in which he ligated the left common carotid and, later, ascertained that the vessel on the right side was not pervious. Death resulted.

DR. THEO. A. MCGRAW of Detroit, Mich., reported
A CASE OF INVAGINATION OF THE CECUM AND VERMIFORM APPENDIX.

A boy, aged six years, was seized with an attack of cholera morbus, the stools containing, besides thin feces, only a little blood and mucus. He recovered from this attack, but while not troubled with diarrhea, constipation or with fever, he had succeeding attacks of pain, lasting from a few hours to a few days, which grew constantly more severe and frequent, until they became so severe that three-quarters of a grain of morphin was required to give relief. After a short time his condition would again be normal. Chronic appendicitis was excluded by the absence of fever, and the presence of an internal omental hernia was suspected. An incision was made above the navel, and the large intestine found inflamed, and the ascending colon had so long a mesentery that the cecum and vermiform appendix was easily brought out through the wound. The cecum and appendix were invaginated into the ascending colon, evidently a condition of long standing. A longitudinal incision was made through the constriction, and the invaginated portion drawn out and excised. The small intestine was not involved in the invagination. The patient made a good recovery.

SECTION IN OBSTETRICS AND GYNECOLOGY.

FIRST DAY—SEPTEMBER 1ST.

At 10 A.M. the President of the section, DR. WILLIAM JAPP SINCLAIR of Manchester, England, called the meeting to order and announced the postponement of the delivery of his Address until Thursday morning. DR. F. HENROTEN of Chicago then read a paper, entitled

THE OPERATION OF CHOICE IN THE SURGICAL TREATMENT OF SEPTIC PELVIC DISEASES, WITH SPECIAL REFERENCE TO THE EARLY VAGINAL INCISION.

He stated that ovarian abscess occurs much more frequently than is generally supposed. The Fallopian tubes show a smaller proportion of alterations than the ovaries which have become infected through the lymphatics, while the tube becomes secondarily diseased through contiguity of tissue. Some slight secondary changes also take place in the broad ligaments in the incipency of the affection. The diagnosis of simple uncomplicated ovarian abscess is difficult. If the woman has fever and pain, the ovary being sensitive and enlarged, slightly movable or immovable, with slight sensitiveness in the uterus, which is more or less fixed, that woman probably has an ovarian abscess. Pus forms in four or five days, and should be at once evacuated. The best route for this is through the vagina, back of the uterus. He has made 125 vaginal incisions without exsection. Pus forms in the pelvis much more rapidly than the surgeon expects, and pus in the pelvis is an exceedingly dangerous thing. Immediate incision, usually made posterior to the uterus through the vaginal fornix, with drainage, is necessary. In ninety per cent. of incipient cases of extra-uterine infection cure will follow this procedure. In old cases of pyosalpinx and in certain hyperplastic cases of tubal and uterine disease this operation will not be a success. In well-defined cases of febrile excitement and pelvic pain the early vaginal incision is indicated. He especially emphasized the importance of early incision. The most bril-

liant results follow when the operation is performed before pus forms. The objection may be made that such results will follow without operation, but recovery in these cases only follows after repeated relapses. The symptoms depend entirely upon the nature of the pus, whether infectious or non-infectious.

DR. J. ALDERSON TEMPLE of Toronto opened the discussion on

THE CAUSATION AND TREATMENT OF HYPEREMESIS GRAVIDARUM.

He stated that little progress has been made in clearing up the obscure causes of this grave disease. It is much more common in primiparæ, and much more fatal than is usually believed. Morning sickness is purely a sympathetic state, but pernicious vomiting is invariably accompanied by some pathologic condition. Carl Browne, after an experience with 105,000 obstetric cases, says he has never seen one fatal case. In the majority of fatal cases there has been an absence of reliable data regarding *post-mortem* examinations. Hossack said that in most cases we have no right to say that death results from the vomiting. Grailey Hewett lays stress on flexions and displacements of the uterus in the etiology of the disease. T. A. Emmet speaks of cervical inflammations as a cause of vomiting. Involvement of the vomiting center is claimed as a cause by many. He would urge careful discussion and further study on the subject.

DR. ARTHUR E. GILES of London has studied the cause of the vomiting of pregnancy. About thirty per cent. of pregnant women do not vomit; therefore, the vomiting must be regarded as pathologic. About fifty per cent. have no morning sickness during the first three months. When the vomiting occurs during the early months it is generally associated with hydramnios. He regards the vomiting as due to a combination of three factors: (1) exalted nervous tension, (2) peripheral irritation in the uterus, (3) an easy channel for the discharge of nervous tension through the vagus. He would divide all cases of hyperemesis into two classes: (1) those associated with organic disease; (2) those in which there is no organic disease. He does not agree with Hossack in the statement that when a *post-mortem* examination is not made the correctness of the diagnosis should be doubted. In the way of treatment he would urge arrest of the vomiting by measures which do not terminate the pregnancy.

DR. WILLIAM GARDNER of Montreal regards dilatation of the cervix as by no means devoid of danger. It may end the pregnancy, and may induce dangerous hemorrhage.

DR. R. B. MAURY of Memphis, Tenn., has seen many cases of pernicious vomiting, but has not seen many displacements associated with it, nor has he found an accompanying history of dysmenorrhea. He has treated many cases by the usual method of applying silver nitrate to the cervix, and has dilated the cervix, but has repeatedly been compelled to induce abortion, only, however, after consultation. This he regards as a serious operation. The symptoms indicating it are rapid pulse (120 or more) and dark brown or black vomit.

DR. A. J. C. SKENE of Brooklyn said that he was

taught that this disease, to begin with, is due entirely to a nervous condition. It often goes beyond this, in accordance with the rule that long-continued functional troubles will lead to organic lesions. In the ejected matter we find the products of gastritis, and he believes that this is a cause of the disease. Functional disturbance of the liver is common in pregnancy, and this may become organic, after which the stomach shares in the process. Cholesteraemia is more common in pregnancy than in uremia. He believes that Grailey Hewett is correct in ascribing the condition largely to uterine displacements. J. Marion Sims was probably the first to dilate the cervix for this condition. The speaker believes in lavage, not only in purely functional cases, but when there is hypermotility and hypersecretion of the stomach.

DR. CHARLES JEWETT of Brooklyn said that in his hands treatment has not been very satisfactory. The patient should be kept at rest and digestion coddled. Feeding by the rectum is of service. Cocain applied to the cervix uteri is valuable in many cases, especially when combined with Copeman's method of dilation to one-half or three-quarters of an inch.

MR. J. C. CAMERON of Montreal said no rule of treatment can be formulated. The patient must be treated and not the disease, which occurs irrespective of environment.

DR. ROBERT BARNES of London, through Dr. Giles, presented to the Association and the Obstetric Department of McGill University, a drawing illustrating the boundary line in placenta previa, which he designates as Bamer's boundary line.

DR. JOHN CAMPBELL of Belfast, Ireland, presented a paper, entitled

LABOR COMPLICATED WITH ABNORMALITIES OF THE CERVIX UTERI AND VAGINA.

Atresia of the cervix is best treated by scratching the site of the os and separating the membrane by a sweep of the finger. Rupture of the membrane should be delayed as long as possible. Vaginal septa may be transverse or longitudinal, and may simulate atresia of the cervix. The longitudinal septa are more common.

DR. ROBERT A. MURRAY of New York called attention to the condition of the cervix consisting in an atresia subsequent to chronic hypertrophy as a result of the application of caustics. Manual dilation is the treatment required.

DR. HOWARD A. KELLY of Baltimore said that cases of cicatricial stenosis of the vagina should not at once indicate Cæsarean section. Dilation will accomplish much.

DR. CHARLES JEWETT of Brooklyn now prefers to treat contracted cases by multiple incision and dilatation by rubber bags rather than by hand.

DR. W. C. LUSK of New York presented a contribution to the study of the first stage of labor in the form of a frozen section of a woman dying in labor from some unknown cause. He concluded: (1) that the bulging area is a retraction ring; (2) that the os internum is seen here in the first stage of labor as a distinct structure, and widely separated from the retraction ring, a lower segment

containing passive fibers intervening between the two; (3) that the contraction of the anterior fibers independently of the posterior ones, in the upper portion of the segment which meets superiorly the retraction ring, suggests a greater traction below upon the inner fibers than the outer.

DR. WILLIAM GARDNER of Montreal presented a large number of vesical calculi from a woman seventy-two years of age, who had had procidentia uteri for twenty years. The stones were removed through a vaginal incision and the woman cured.

SECTION IN PUBLIC MEDICINE.

FIRST DAY—SEPTEMBER 1ST.

The section was called to order by the President, Dr. E. P. Lachapelle, and after some preliminary business the President's address upon

THE PROGRESS OF SANITATION IN CANADA

was listened to. The reader reviewed in detail, with pardonable pride, the strides taken by sanitary medicine in the Dominion from the days of the quaint old health-laws of Louis XIV. in 1667, to the present time. The clergy at first, and until the English conquest, were the health-officers, and the parish registers the sole vital records. The system at present in force dates only from the confederation of 1867.

Next came an interesting discussion upon the question,

HOW FAR SHOULD MANDATORY MEASURES GO IN DEALING WITH (a) MEASLES; (b) WHOOPING-COUGH; (c) TUBERCULOSIS; (d) LEPROSY?

The discussion was a cosmopolitan one, but the speakers naturally adopted curiously antagonistic grounds, the English members, on the one hand, urging that persuasion should be chiefly used and legal enforcement not insisted upon until public sentiment is able to approve of it, and, on the other, the Canadian members and American participants, urging the passing of stronger laws and more stringent application of them, the difference probably being due to the fact that English communities are governed by their intelligence, ours by our ignorance, and by the time the necessity for a measure has penetrated the intellects of our legislators the whole community is thoroughly alive to its benefits.

DR. PETER H. BRICE, secretary of the Provincial Board of Health of Ontario, opened the debate. He regarded the difficulties surrounding isolation or even notification in measles and whooping-cough as extremely great. The desirability of isolation as far as possible in tuberculosis ought to be strongly urged upon the laity at every opportunity, and our most crying need is for special hospitals in every large community where such isolation can be carried out. As to leprosy, it is practically a curiosity in Canada, and demands no active attention whatever. He was not aware of more than one case of the disease in the province in which he lived.

DR. C. O. PROBT, secretary of the Ohio State Board of Health, said that measles and whooping-cough are extremely difficult to deal with legally, but they are serious factors in the death-rate, destroying more lives than scarlet fever, and should be legislated against if only to arouse

and educate the public as to the danger which may be incurred. He urged that special hospitals be provided for tuberculous patients, and that thorough disinfection, at least, of all rooms occupied by consumptives after their death be made compulsory. General sanitary measures, especially against foul air and overworking, will accomplish more than attempts to prevent communication.

DR. H. HANDFORD of Nottingham was the next speaker. He urged reliance upon persuasion and educative measures, and declared that danger lurks in legal enforcement. In all Nottingham not a single patient with scarlet fever has been forcibly removed to the isolation hospital, and yet nearly ninety-five per cent. of all such have been voluntarily taken there. Compulsion has been tried widely and has almost universally failed in England. From statistics collected by him, he believed that measles occurring during the first year of life has a mortality of nearly twenty per cent., and these patients should certainly be isolated when possible.

The subject was then opened for general discussion. DR. OLDRIGHT of Toronto favored the necessity of some compulsion, if only for educational purposes, and, with DR. E. DUNCAN of Glasgow, urged strongly that the chief danger in tuberculosis lies in infection through rooms, and that two measures should be legally insisted upon: disinfection after death, or removal and avoidance of overcrowding. Dr. Duncan reported five cases occurring in one healthy family which moved into an infected and cramped house, but could find no case of room-infection where cubic space was adequate and ventilation good. DR. CARR of Braintree, Yorkshire, and DR. A. JOHNSTON of Glasgow also urged persuasion and education, declaring that compulsory notification of measles has failed in eighty per cent. of the cities where it has been tried. DR. WOLFRED NELSON of New York commented upon the slight fear of leprosy expressed by all the speakers who had alluded to it, and declared from an experience of seven years in the West Indies and at Panama that leprosy is absolutely non-contagious, as had been voted in the session of the Pan-American Medical Congress. No case of the disease has occurred among the nurses in the Trinidad Asylum during its twenty-six years of existence, and out of 1000 cases in India, Beaven Lake found only two apparently due to contagion, and he thought sanitarians quite right in ignoring it. This evoked a spirited protest from DR. BENJ. LEE of Philadelphia and DR. F. FORMENTS of New Orleans, on the ground that they had each seen a case which was of contagious origin. This closed the discussion, and DR. JAMES T. NEECH, Health-Officer at Atherton then read a paper upon

THE PERIOD OF INFECTIOUSNESS IN SCARLET FEVER,

in which he came to the conclusion that the usual formal term of six weeks is too short, as discharged patients have proved to be the medium of fresh infection in from one to two per cent. with this limit. Apparently healthy mucous membranes seem capable of retaining infectious materials, and he urged the extension of the term of isolation to eight weeks.

DR. A. JOHNSON of the Isolation Hospital, Glasgow,

supported these positions and urged thorough disinfection of the nose and throat as well as of the skin before patients are sent home. SIR JAMES GRANT of Ottawa called attention to the bearing of this long infection period upon the possibility of puerperal infection at the hands of the physician. DR. MALCOMSON of Middleboro reported a case in which damages had actually been given against a health-officer on account of infection from a discharged patient. DR. ADAM MICKLE of Christ Church, New Zealand, also spoke briefly.

The papers of Dr. Hough of Bradford, Miss., upon "Cadaveric Fauna," and of Dr. Murray Wrotter of Washington, D. C., upon "A Report of Entomological Examinations of One Hundred and Fifty Cadavers" were of great interest. Both agreed that further investigation has failed to support the former supposed medico-legal importance of the insects present in the coffin or tissues of a corpse as to the time of burial and age since death.

REVIEWS.

DIE PATHOLOGIE UND THERAPIE DER NEURASTHENIE.

VON DR. OTTO BINSWANGER, Professor der Psychiatrie zu Jena. Jena: Gustav Fischer, 1896.

DESPITE the numerous publications on the different functional nervous disorders, any thorough investigation of this subject will be regarded as a valuable contribution to science, inasmuch as we are proceeding in this domain more or less on *terra incognita* as in comparison with organic diseases.

In view of the fact that we have to depend solely on the manifold clinical symptoms without positive knowledge of the nature of the pathologic process, it is but natural that these various disorders have been looked upon in the most diverse ways according to the standpoint of the individual observer, and that their classification has been left more or less to the discretion of different authors. While on the one hand innumerable divisions and subdivisions of functional nervous diseases have been made, there are, on the other hand, many authors who consider all these classifications as purely arbitrary and who would not look upon any of these divisions as a *morbis sui generis*, but rather as a casual complex of various symptoms.

The author of this book holds a somewhat original view in regard to the nature of neurasthenia. According to him, there is not a qualitative but rather a quantitative difference between the affection and the other functional nervous diseases, of which neurasthenia forms, so to say, the first step. "Neurasthenia stands on the borderline between the undeveloped nervous affections and the fully developed neuroses and psychoses." The following is his definition of the disease: "Under the term neurasthenia we classify all those neuropathic conditions which have developed from the soil of a general functional disease of the nervous system, but which cannot be classified among the fully developed neuroses and psychoses emanating from the same soil, on account of their unfinished character."

In accordance with this broad definition we find nearly

all symptoms of the entire psycho- and neuropathology mentioned in the book; and among the numerous cases reported we find all kinds of functional psychoses and neuroses. "Women, who kick the floor with their feet, smash plates on the floor, run up and down without purpose, and finally throw themselves on the sofa or bed crying in utmost despair" always have and probably will be called "hysterical" and not "neurasthenic," while men (case 8 and 9), who are suffering from deep mental depression with paroxysms of anxiety, and who during such an attack actually commit suicide will be considered as cases of melancholia, and not of neurasthenia.

In the same manner we find cases of hypochondriasis, of psychical degeneration, of imperative ideas, agoraphobia, topophobia, etc., described as various forms of neurasthenia. The following are the different varieties of neurasthenia according to Binswanger:

1. Neurasthenia with predominating psychical disturbances; (a) the hereditary form of neurasthenia; (b) the acquired intellectual debility; (c) the hyperalgetic form.
2. The motor form of neurasthenia; (a) with predominating irritative symptoms; (b) the parietic form.
3. The dyspeptic.
4. The angioneurotic.
5. The sexual form of neurasthenia.

While the attempt of the author to characterize and classify a special disease cannot be called a success, his book, however, will be of interest and value to anyone who seeks information about the symptomatology and treatment of general functional disorders of the nervous system.

THERAPEUTIC HINTS.

For Amenorrhea Occurring During Chlorosis.—DAUCHEZ recommends the following mixture for amenorrhea in young chlorotic girls:

℞	Syr. hypophosphite of iron	} aa	3 i
	Syr. hypophosphite of soda		
	Syr. hypophosphite of manganese		
	Glycerin		
	Cherry laurel water		m. xl.
M. Sig. Teaspoonful after meals.			

Rapid Cure for Pemphigus.—Two obstinate cases of pemphigus were cured by OHMANN-DUMESNIL (*St. Louis Med. and Surg. Journal*, June 1897), with the following prescriptions:

℞	Acidi arseniosi	.	.	.	.	gr. $\frac{1}{20}$
	Pulv. piper nig.	.	.	.	.	gr. iss
	Ext. gentianæ	.	.	.	.	q. s. ad.
M. Ft. Pil. No. j. Sig. One pill after each meal.						

The bullæ were opened, and the following ointment applied to the excoriated portions of the skin:

℞	Pulv. camphophenique	.	.	.	.	℥ i
	Ung. aquæ rosæ	.	.	.	.	℥ xvi.

To Make a Normal Salt Solution for Transfusion.—

℞	Sodii carb.	.	.	.	.	gr. xv
	Sodii chlor.	.	.	.	.	3 iss
	Aquæ	.	.	.	.	Oii.

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ORIGINAL ARTICLES.

PREVENTIVE MEDICINE IN THE CITY OF NEW YORK.¹

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THE conditions under which sanitary work is carried on in the United States differ considerably from those under which the sanitary authorities work in Great Britain. For instance, in the United States there is no national Board of Health, each state having its own Health Board and sanitary laws. It necessarily follows that throughout the United States there is no uniformity in regulations and methods. No definite statement can be made as to the condition of preventive medicine generally in America; but speaking broadly, in the rural districts and in the smaller towns, the sanitary methods are crude, while in many of the large cities, there is an enlightened and progressive policy to be found, equal to that in any of the great cities of the world.

The Health Department of New York City is an entirely independent sanitary organization, not being subject even to the jurisdiction of the State Board of Health. The jurisdiction of the board extends over the whole city, containing at present about 2,000,000 population, and in 1898 a similar board, increased to five members, will have jurisdiction over Greater New York, with a population of 3,250,000.

Ordinarily the duties of sanitary authorities relating to the infectious diseases are regarded as limited to the inspection of reported cases of only a few of the infectious diseases, their removal to hospitals when required, and the subsequent disinfection of the premises. In New York City *all matters connected with the scientific investigation, diagnosis, care, or sanitary supervision, in every way, of the infectious diseases are regarded by the Board of Health as properly coming within its province.*

The first important departure in New York City from the older methods was made in 1892 by the establishment of a bacteriologic laboratory, this being the first bacteriologic laboratory ever established

under municipal control. Originally designed to afford facilities for the diagnosis of Asiatic cholera, and for the investigation of questions relating to disinfection, the scope of its work was soon extended to include the bacteriologic diagnosis of diphtheria. The investigations of the New York City Health Department relating to diphtheria laid the foundation of municipal bacteriologic laboratories, and made them necessary to the proper conduct of sanitary work. In October, 1894, investigations in connection with the production of diphtheria antitoxin were begun, and in December of that year a special annual appropriation (antitoxin fund) of \$30,500 was made by the city authorities for the prosecution of this work. On January 1, 1895, the Health Department commenced the use of the antitoxin produced in its own laboratories. The special antitoxin fund made possible the establishment of a research bacteriologic laboratory devoted to the production of diphtheria antitoxin and other bacteriologic products, and to general experimental investigations in relation to the infectious diseases. In 1896 arrangements were completed for placing at the command of the physicians of New York City Widal's test for the diagnosis of typhoid fever; and recently arrangements have also been made for the administration of Pasteur's treatment for the prevention of rabies. A special laboratory and stable are devoted to the production of bovine vaccine virus, and this is freely distributed and vaccination is performed, free of charge, by the medical officers of the department.

The following statistical statement of some of the routine work performed in the laboratories of the Health Department gives a better idea perhaps of the extent of the work: During the year 1896, 25,049 cultures were examined for diphtheria bacilli; 1856 specimens of sputum from cases of suspected tuberculosis were examined for tubercle bacilli; 16,796 vials of diphtheria antitoxin were issued, and 918 patients with diphtheria were treated in their homes by the medical *attachés* of the laboratory, and 1214 persons were immunized.

Every case of contagious disease reported to the Department is inspected by the medical inspectors of the district in which it occurs, and, when necessary, such cases are removed to the Department hospitals. Disinfection is then performed, and is compulsory in every case, all infected materials being taken to the disinfection station for destruction or

¹ Abstract of the address in Public Medicine, delivered before the British Medical Association at the Sixty-fifth Annual Meeting, Montreal, August 31 to September 3, 1897.

disinfection by steam. The work of inspection is carried on by a number of different corps of inspectors. These include the district medical inspectors, the district and special vaccinators, the inspectors for the administration of diphtheria antitoxin, the diagnosticians, the summer corps of inspectors, the medical inspectors of schools, etc. There are also a number of sanitary and food inspectors, who are not necessarily medical men, such as the inspectors of plumbing and ventilation, the sanitary police, the inspectors of offensive trades, the inspectors of meat, fish, milk, etc., and the inspectors of mercantile establishments, these last having under their charge the regulations as to the employment of women and children in such establishments. Besides these, there are veterinary inspectors, who have the supervision of the application of the tuberculin test for the diagnosis of tuberculosis in cattle and the diagnosis of other infectious diseases in cattle and horses.

The method of procedure in relation to diphtheria, given in detail, is as follows:

Knowledge of the existence of cases of diphtheria reaches the Department either by a direct report of the case by the attending physician or through the forwarding of a culture to the laboratory for bacteriologic examination when the case is of doubtful character. The cases are immediately referred to the medical inspectors of the district in which the case occurred. If the person lives in a tenement, lodging-, or boarding-house, or hotel, and a culture has not been previously made by the attending physician, the inspector makes, in each instance, a culture to confirm the diagnosis. The subsequent action of the Department depends upon the result of this culture. If diphtheria bacilli are found, the case is treated as one of diphtheria; if they are absent, the subsequent treatment depends on the special conditions existing. In every instance in which the case is proven to be diphtheria, at the end of ten days a secondary culture is made by the attending physician or the district medical inspector, to determine whether the diphtheria bacilli are still present in the throat, and subsequent cultures are made at short intervals until the examinations show that the organisms are no longer present. The case is then referred for disinfection, a detailed statement being left at the house by the medical inspector in charge, to guide the disinfectors as to the course which shall be followed.

Every case of diphtheria which comes to the knowledge of the Department is recorded according to the street and number in a card index, envelopes being used in place of cards. In each envelope, representing always one case, are placed all of the data relating to the first and subsequent cultures, and

results, and as each case is recorded it is at the same time platted on sectional maps of New York City drawn to scale, showing every house lot in the city. This platting is done by conventional signs, so that it is possible at a glance to determine the grouping and distribution of cases in different parts of the city, how many cases have occurred in any given house in the city during the last four years since this method has been in use, and when the cases occurred. It is also possible in a moment, by reference to the yearly card index, to find all the information in relation to each case which the Department possesses.

A special corps of inspectors is assigned to the administration of diphtheria antitoxin, and, on request, one of these inspectors will visit a person suffering from diphtheria in any part of the city, day or night, and administer diphtheria antitoxin under the supervision of the attending physician, and in cases where the patients are too poor to have an attending physician, supervise their removal to a hospital. These inspectors are also prepared, at the request of the attending physician, to perform intubation in laryngeal diphtheria. It is the usual course, where antitoxin is administered by an inspector, to immunize all members of the family who have been exposed to the disease. Diphtheria antitoxin has also been largely employed in institutions, especially for children, when diphtheria has appeared. This is the ordinary routine, and in every instance during the last two and a half years it has been possible to quickly stamp out diphtheria in institutions by this process of immunization.

Diphtheria antitoxin is administered by the inspectors free of charge, and is furnished on request free of charge to all public institutions, and may be obtained by physicians at more than one hundred pharmacies throughout the city, where it is on sale—free of charge, for administration to persons who are too poor to pay for the remedy, the only conditions in the latter case being that reports of the cases treated be forwarded to the Health Department on their completion.

The attitude assumed by the Health Department of New York City toward pulmonary tuberculosis, and the measures adopted for its prevention, constitute a most important feature of its work. The Health Board first began an educational campaign in relation to the causation and prevention of tuberculosis in 1889, and leaflets based on a communication on this subject presented to the Board by the writer and associate pathologists, giving the essential facts as to the nature of this disease, were widely distributed. No further action was taken at that time, as investigations showed that the medical profession

and the public were not then prepared for more extended measures. In 1894, attention having been again called to the subject by the writer, it was determined to institute at once more comprehensive measures for the prevention of this disease. The measures then adopted required notification of all cases of pulmonary tuberculosis occurring in public institutions, and requested reports of cases occurring in the practice of private physicians; they included also arrangements for the bacteriologic examination of sputum, to assist in the early diagnosis of this disease; the inspection of all reported cases in tenement-houses, lodging-houses, hotels and boarding-houses, and the instruction of the patients and their families as to the nature of the disease and the means to be taken for its prevention; the inspection of the premises in all instances where deaths were reported as due to tuberculosis, and the issuing of orders, when it was deemed necessary, upon the owners of apartments which had been occupied by consumptives and vacated by death or removal, requiring that such apartment be thoroughly renovated by painting, papering or kalsomining before they were again occupied by other persons; and the education of the public, by wider and more comprehensive methods, as to the nature of tuberculosis.

Under the resolutions by virtue of which these measures were enforced, 4166 cases of tuberculosis were reported in 1894; 5818 in 1895, and 8334 in 1896. All cases reported, so far as possible, except those in private houses, were visited, and the premises where the patients lived were inspected, and, in addition, the premises occupied by persons dying from tuberculosis (numbering each year nearly 6000) were inspected, and such action taken as was considered possible and desirable. Altogether the premises and cases thus coming under observation during these three years numbered more than 35,000.

In the beginning of 1897, on the recommendation of the writer and Dr. Prudden, the Health Board of New York City finally declared pulmonary tuberculosis to be "an infectious and communicable disease, dangerous to public health," and required "the notification of all cases occurring in the city," in the same way as is required of cases of smallpox, scarlet fever, diphtheria, etc. Tuberculosis, however, is not classed with the contagious diseases, but by a special section of the Sanitary Code, enacted to provide for these measures, is referred to as "an infectious and communicable disease."

At the present time there are no hospitals directly under the control of the Health Department for the isolation of cases of pulmonary tuberculosis, but it is hoped that such hospitals may be soon provided.

Persons suffering from pulmonary tuberculosis should not be treated in association with other classes of cases in the medical wards of general hospitals, and are often very properly excluded from such hospitals. Moreover, experience has shown that in institutions devoted solely to the care of consumptives the general welfare of the patients is more easily fostered, the risks of fresh infection more certainly diminished, and the chances for recovery more surely enhanced than in general hospitals. From the beginning of this work the officials of the Health Department have encountered, in the lack of proper facilities for the care of consumptives, a great obstacle to practical success, and the writer is convinced that the grave responsibilities which rest upon sanitary authorities generally in this matter cannot be properly discharged without the establishment, under their direct control, of additional hospitals for the care and treatment of this disease. No week passes in which the officers detailed to this work in New York do not meet with many instances in which the members of many households, numerous inmates of crowded tenement-houses, employees in dusty and unventilated workshops, and many others, are dangerously exposed to infection from victims of this disease, who cannot gain admittance to the overcrowded public institutions, or who reject all proffered assistance and instruction, and, from ignorance, indifference, or inability through weakness due to the disease, scatter infectious material broadcast, and thus diminish their own chances for recovery and imperil the health and safety of others. In such cases sanitary suggestions are futile, and removal to a hospital constitutes the only effective action.

The Health Department of New York City, while feeling strongly that the most important source of infection is through the dried sputum of consumptives, has elaborated with great care methods for protecting the public, as far as is within its power, from infection by the meat and milk of tubercular animals. Since 1895 no milk has been allowed to be sold within the city without a permit from the Health Department, and before these permits are issued information must be furnished as to the source from which the milk is obtained, the number of animals, the character of the food-supply, and the sanitary conditions surrounding the dairy. There are also special regulations controlling the sale of milk, and the permits may be revoked if these regulations are not complied with. All milch cows in the city are subjected to the tuberculin test, and animals found to be diseased are killed. There also exists a careful inspection of animals slaughtered for food and of all meats sent into the city, and the carcasses of those found to be tubercular are destroyed.

Another amendment to the Sanitary Code which has recently been enacted, as the result of investigation by the Department showing that the dust of street-cars and various public places is often infectious, prohibits the spitting on the floors of cars, ferry-boats, etc., and requires that all companies post notices to this effect in the public conveyances.

Most beneficial effects have already resulted from the various measures instituted for the prevention of tuberculosis. Not only has there been a very material decline in the number of deaths occurring from this disease, but there has been a most gratifying increase of knowledge and intelligence among the poorest class of the population as to its nature. This increase of intelligence, and the precautions resulting from it, afford the greatest promise in the future of a persistent and still more rapid decline in the frightful mortality caused by the tubercular diseases.

The method employed for recording and platting cases of diphtheria has also been used for cases of tuberculosis. Transcripts from the maps on which are platted the cases of diphtheria and tuberculosis have been prepared, to show the distribution of those cases in certain wards of the city. Thus from an analysis of the distribution of reported cases and deaths from tuberculosis in Wards 4 and 6 of New York City, for the years 1894, 1895, 1896 to March, 1897, it appears that during this period only thirty-eight per cent. of the inhabited houses of these two wards were infected with this disease, and that fifty per cent. of the cases of tuberculosis occurred in twenty-three per cent. of the infected houses, these constituting only nine per cent. of all the dwelling-houses in the wards. The facts, as shown by a study of these maps, argue more forcibly for the infectious and communicable character of this disease than could any words.

Early in 1897, under the authority of a special resolution of the Board of Estimate, 150 medical school inspectors were appointed, and a system of medical school inspection was begun. During three months, sixty-five school days, in which this system has been in operation, there have been examined 63,812 children, and 4183 were excluded from school for the following diseases: Measles, diphtheria, scarlet fever, croup, whooping-cough, mumps, contagious eye diseases, parasitic diseases of the head and body, chicken-pox, and skin diseases. This system of school inspection has thus far given most satisfactory results and promises still more for the future.

The educational work of the Health Department constitutes a very important feature of its usefulness. It has been the custom of the Department for some years past to issue from time to time circulars of in-

formation on various topics, and especially those connected with infectious diseases—their diagnosis, treatment, or management. Some of these circulars are popular in character, very large editions being published, 50,000 or more at a time, and are designed for general distribution, particularly among the tenement-house population. These circulars are published by the various medical journals and by the daily papers in New York City, and thus gain a very wide circulation. They are also sent by mail or delivered by messenger to the physicians of the city. Aside from the circulars described, numerous scientific bulletins have been issued from the bacteriologic laboratories, detailing the results of original investigations in connection with infectious diseases, and these bulletins are widely distributed among the profession of New York City. The importance of this educational work cannot be overestimated. Its value is incalculable in disseminating popular and scientific information in regard to the results of the latest studies in infectious diseases, and there have been constantly exhibited in New York the most gratifying indications of the influence of the information thus distributed, on both the general public and the medical profession. More than this, the circulars keep constantly before the medical profession and the laity the work, the duties, and the functions of the Health Department, as related to the people and the profession. The criticism has often been made, particularly in Europe, and in the earlier work of the New York City Health Department, that the methods proposed were impracticable. The results have shown that they are not impracticable. What has been described is not something that it is proposed to do, but it is a statement of what has been done, and the work, as briefly outlined in some of its phases, is to be considered as only introductory. It is the purpose of the Health Board to establish a supervision of all infectious diseases along the lines which have been thus far developed, in relation to tuberculosis and diphtheria, as rapidly as the scientific knowledge at command will make such a course possible.

The final test of the efficiency of any scheme of sanitary control and of the healthfulness of any locality is found in the mortality statistics, considered in relation to the causes of disease and death. Various factors and conditions, however, may influence these, such as density of population, nationality of the inhabitants, and physical conformation of the country. The conditions in New York City are in many respects very unfavorable. The average density of population of the larger part of New York, that is on Manhattan Island, is greater than that of any other great city of the world. Sanitary District A

of Ward 11, New York City, has a population of more than 800 to the acre; Ward 10, over 640 to the acre; Ward 13, 540; Ward 17, 430. The only localities approaching these wards in density of population is a small area in Paris, where the population is 430 to the acre; one district in Prague with 485 to the acre, and the Whitechapel district in London, which has a population of about 300 to the acre in Spitalfields, Mile End, and Newtown, and 365 in Bethnal Green. The density and cosmopolitan character of the population of New York also renders the sanitary problems presented extremely difficult of solution. Then, too, the physical conformation of Manhattan Island, which is long and very narrow, produces overcrowding, fully three-fourths of the population living in tenement-houses, which are five, six, or more stories high, and contain from two to four or more families on each floor.

These facts should be kept in mind in considering the mortality statistics of New York, as compared with those of the large cities of Great Britain and the Continent. With them before us, the diminution in the death-rates, and the present death-rate, are most significant.

A comparison of the mean death-rate for decennial periods in New York City since 1834 shows that there was an increase during the first three periods ending in 1863, and that since that date there has been a continuous and very heavy decline in the rate, especially marked in the most recent years. The mortality in New York arose to such a point that the inhabitants became alarmed, and in 1866 the Health Department as now constituted was organized. In the decennial period ending in 1843 the mean death-rate was 28.03; for the period ending 1853 it rose to 33.81; the next period, ending in 1863, it was 33.94. Since that time it has declined to 31.11 for the decennial period ending in 1873; to 26.87 for the period ending in 1883; to 25.78 for the period ending in 1893, while in the year 1894 it was 22.76; in 1895, 23.10; in 1896, 21.54, and for the first half of 1897, 19.60. The population meanwhile has increased from 312,000 in 1840 to an estimated population of 1,990,000 on July 1, 1897. The mortality-rate is normally higher for the first half of the year than the second half, and it is, therefore, probable that the rate for 1897 will be a fraction over 19, or a diminution of twenty-five per cent. on the death-rate for the decennial period ending in 1893.

The search for the causes of diminished mortality from all causes shows that the largest reduction has been in the zymotic death-rate, including diarrheal diseases of children under five years, and there has been also a steady and important decline in the

tubercular death-rate since 1886. Investigation further shows that a special reduction in the mortality from diphtheria and croup, amounting to nearly forty per cent., has occurred since the introduction of diphtheria antitoxin with the beginning of 1895. This reduction has taken place in spite of an increase in the number of reported cases of this disease. Up to the beginning of 1895 there had been a steady increase for some years in the mortality from diphtheria and croup, and for the year 1894 the death-rate was higher than that from any other single disease, excepting tuberculosis and pneumonia—pneumonia really including a number of different affections. The combined death-rate from measles, scarlet fever, diphtheria, croup, smallpox, and typhoid fever has been reduced exactly one-half within ten years, the rate for 1896 for these diseases being 1.64 per 1000 population, as contrasted with 3.26 for 1887; for 1897 it will apparently be still lower.

The government of the United States is democratic, but the sanitary measures adopted are sometimes autocratic, and the functions performed by sanitary authorities paternal in character. We are prepared, when necessary, to introduce and enforce, and the people are ready to accept, measures which might seem radical and arbitrary, if they were not plainly designed for the public good, and evidently beneficent in their effects. Even among the most ignorant of our foreign-born population few or no indications of opposition or resentment are exhibited to the exercise of arbitrary power in sanitary matters. The public press will approve, the people are prepared to support and the courts sustain, any intelligent procedures which are evidently directed to the preservation of the public health. The belief is never aroused in any class of the population, however ignorant, that the institution or enforcement of any sanitary measure is primarily designed for the restriction of the individual freedom. There is nowhere to be found any jealousy or distrust of law or government, as such. It is therefore possible to adopt measures more arbitrary in many respects than could be adopted in most other countries, simply because our government is democratic. This gives the keynote to the attitude of the sanitary authorities of New York.

It may be truly said that there is no great city in the world to-day which, in the broad sense, is cleaner and healthier than New York. By clean is meant the purity of the atmosphere, the cleanliness of the streets, the abundance and purity of the water-supply, and the efficiency of the sewerage system. No city is healthier, considering all the sanitary factors in the situation, such as the size and density of population, the varied nationality of the inhab-

itants, the character of the climate, etc. Nowhere can there be found a fuller recognition than in the United States of England's high standard of excellence in public medicine, or a more sincere appreciation of her vast contributions to the progress of sanitary science. But she must look well to her laurels if her cities are to be kept cleaner than the great cities of the United States, or her urban population is to be healthier and happier than the same class on this side of the Atlantic.

THE TREATMENT OF CONVERGENT STRABISMUS IN CHILDREN.¹

By L. A. W. ALLEMAN, M.D.,
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IN general, our definite knowledge of a medical subject is inversely as the contributions to its elucidation. This, unfortunately, applies to strabismus, for despite the thought and patient observation which have been devoted to this matter, it is still true, as has been said by Dr. Chas. Stedman Bull, that "the whole subject of strabismus is the least understood by modern ophthalmologists in the whole domain of ophthalmic science." I hasten, therefore, to assure you that I shall not still further obscure the subject by the statement of theories or by the discussion of the mooted points, but shall simply outline the method of treatment which experience has demonstrated to be most effectual in these cases. The discussion will not include paralytic conditions in which the power of excursion of an eye in certain directions is diminished or abolished through paralysis of an ocular muscle. I will concern myself only with concomitant strabismus. Here the associated movements of the eyes are performed with little or no limitation of motion, but the observed object is fixed with one eye only, the other maintaining in all directions a relative position of too great convergence.

The association of convergent strabismus with hypermetropia was pointed out and explained by Donders, who demonstrated the normal relations of convergence and accommodation, showing that for a certain position of convergence we naturally put forth a corresponding accommodative effort, and that in hypermetropia a correction of the optical defect is obtained by an effort of accommodation proportionately greater than that made by a normal eye, and in excess of the convergent effort required for the same distance. Hence, a hypermetropic subject must learn either to dissociate the two functions or to sacrifice either distinctness of vision or binocular single vision. Should one eye chance through op-

tical defect or disease to have much poorer vision than its fellow, the choice is easily made, and strabismus results, diplopia being avoided by mental suppression of the image of the more defective eye. While this theory fails to explain all the cases of strabismus, and while we find instances in which hypermetropic eyes with markedly unequal vision do not squint, it may, for our present purpose, be assumed as sufficient, especially as the treatment which it suggests is attended by a gratifying measure of success.

In some few cases strabismus develops very early in life and binocular fixation is never acquired, but as a rule it is first seen when the child begins to observe its surroundings in a manner requiring more prolonged and accurate fixation, that is, during the third or fourth year. It is sometimes alternating, either eye fixing indifferently, and usually is periodic, being at first only momentarily present, when the child is tired or excited, and reappearing more and more frequently, and finally becoming permanent in one eye. At the first appearance of the squint the advice of the family physician is often sought, and this is my excuse for bringing the subject before you. It is sometimes urged that popular opinions on medical subjects are the result of observations of generations of the laity, and have a sound basis of fact somewhere; but for the very general belief that squint, if left to itself, will be relieved spontaneously, there is small foundation, and I think that the structure of expectation is built largely on the dread of the surgeon's knife.

I will not deny that squint sometimes does disappear of itself, but the correction is more often cosmetic than actual; the eyes have straightened sufficiently to relieve the deformity, yet binocular single vision is not established, and in these cases the patient often experiences more annoyance than in others in which the deformity is more noticeable. I therefore strongly advise against leaving these cases to themselves on the chance of improvement, and will briefly point out the lines of treatment most likely to relieve the condition.

The non-operative treatment of strabismus may be summarized as relieving accommodative strain. No one rule can be given for the accomplishment of this result, and each case will present its own peculiar requirements; the treatment, therefore, must be modified by expediency. Children differ so widely in their mental development and tractability that no arbitrary age can be fixed, but as to treatment, I will divide the cases into two general classes as to when they can or cannot be given glasses.

In the first class there are certain patients who from birth or shortly after have shown a permanent

¹ Read at the Thirteenth Annual Meeting of the Fifth District Branch of the New York State Medical Association, held at Brooklyn, May 25, 1897.

squint of marked degree. (This must not be confounded with the wandering of the eyes of young infants before binocular fixation has been acquired.) Such cases are proper ones for early operation, as they are likely to prove troublesome at best, and it is important, if possible, to give the eyes a correct position during the development of the visual apparatus, thus enabling the patient to learn to use them properly. Delay in remedying the deformity often permits an eccentric portion of one retina to become functionally connected with the macula of the straight eye (the so-called second macula), which, when the squint is corrected later on, gives double vision in the proper position, and adds to the difficulty of effecting a cure.

A word may be said here as to the amblyopia of squinting eyes. In many cases of strabismus the visual acuity of the squinting eye is found to be much lower than that of its fellow. In some cases the reason is apparent in an opacity of the cornea or lens, in some intra-ocular disease, or in an error of refraction; in others there is no discoverable abnormality. On careful examination these eyes will show frequently a blind spot (central scotoma) at the macula, sometimes only for color, and often very small and difficult to detect. Two explanations have been offered of this condition: One, that the eye deteriorates through non-use, as the psychical suppression of the macular image is habitual (amblyopia exanopsia), the other that the defect is primary and the *cause* of the squint.

It probably is true that the habitual suppression of the image of one eye during the period of development does prevent its acquiring full visual acuity, and amblyopic eyes frequently do improve greatly in vision under a correcting glass, proper position, and exercise. It is also undoubtedly true that in many instances some anatomic defect is present, due, possibly to a small macular hemorrhage at birth or to some other cause which we cannot detect by means of the ophthalmoscope. In such cases no amount of use will develop perfect vision. While we cannot educate away structural defects, even these eyes will occasionally improve somewhat with use, and if the fellow eye has normal vision the patient will suffer no apparent inconvenience. Another reason for the early correction of the deformity is the unfortunate influence it exerts on the mental growth of the child. The consciousness of being different, and the heartless criticism of its playmates, tend much to the development of self-consciousness, and entails a great amount of needless suffering on a sensitive nature.

While operation is indicated in the above-mentioned cases, I do not advise it, as a general rule, until I am satisfied that a cure cannot be obtained by

hygienic measures. For very young children (those two or three years of age) who are just developing squint, very careful supervision is necessary. It should be impressed upon their parents that the eyes should have as little near work as possible, and they should be made to understand that this excludes other things than books and pictures. It is astounding, when one looks into the matter, that so little harm results from the toys which are ordinarily given to children. Many of the common toys found in the shops require as accurate vision in their use as the reading of very fine type, and it is the least robust children who most enjoy such toys. The sound, hearty child cannot, from the very excess of its animal spirits, stick to any one thing long enough to do itself much harm. We must exclude from the nursery, then, all picture-books, blocks, segmented toys, kindergarten games, sewing, and whatever requires vision at short range, substituting large toys and, above all else, out-of-door exercise, as much country as possible, with its opportunities for exercising vision at long range, and its restful tones of color.

Careful attention to the bodily health is indispensable. When, under such a regimen, the squint persists, it is well to bandage the fixing eye for a time each day and to compel the child to use the squinting eye, if there be vision enough to enable it to move about. To this may be added the occasional use of atropin, either in both eyes, or in the better eye alone, to force the squinting eye into use. In this way we can carry these children along to an age when glasses can be worn. In many cases this is surprisingly early, sometimes before the third year.

With the second class of children—those who can wear glasses—the first step is to put them under atropin. The result is often marked and immediate, and we can form a fairly accurate idea of the outcome of treatment by the behavior of the eyes under the influence of the drug. When the squint is at once corrected by it, it is safe to predict a cure by the use of glasses. When there is little or no improvement, or when the squint is increased, the cure will be less prompt; but even in these cases, if the parents can be induced to persevere, it may be effected. A year or more may be required, and the effort may for a long time seem to be entirely unavailing. Improvement will be usually manifested at first by an occasional return to a correct position, which will be more and more frequently attained. Sometimes this is quite rapid when once begun.

An accurate measurement of the eyes of young children for glasses is difficult, but by the ophthalmometer of Javal and the ophthalmoscope we can obtain fairly satisfactory results, which can be improved from time to time as the child grows older.

Glasses are usually readily accepted by children, for the relief of the accommodative strain is appreciated by them and they will tolerate quite full corrections.

If the squint is not relieved by the use of atropin and glasses, exclusion of the fixing eye should be practised, and atropin may also be used at intervals if it produces a good result. Systematic exercise with the stereoscope is of great advantage, and the pictures adapted to the use of children are valuable. Attention to the general physical welfare of course is all-important, and a careful regulation of the kind and amount of near work should be observed. This does not mean that these children should be kept from school, but that they should be permitted to do their work under proper conditions. In our private schools these matters already have received much attention, and I believe that the conditions of light, ventilation, etc., are generally excellent. In the public schools they are no doubt as good as they can be made with the means at the disposal of the authorities.

In our own homes there is a very great opportunity for improvement. How often do we find in our houses any provision for the comfort of the children during their study or reading? They must make the best shift they can with the arrangements provided for the adult members of the family. If we were compelled to habitually use chairs and tables suitable for a race twice our size, we would complain bitterly, but this is practically what we demand of our children. It is a simple matter to provide a higher chair or a lower table, for ordinary furniture may easily be adapted to their use. An adjustable rack for holding a book properly is not a great luxury, and any one of ordinary mechanic skill can easily improvise one. I need not urge the importance of these aids to correct posture; we need only put in evidence the drooped shoulders of almost every man we meet who has led a studious life to prove the contention that the matter is one deserving of careful attention.

Artificial light for reading should also be looked into. We frequently find on inquiry that a child is working by an exposed gas-jet, high over its head. Such a light is barbarous; it is insufficient and flickering, is in a bad position, and is little better than the tallow-dip of our fathers. A student-lamp is probably the best readily obtainable source of artificial light, as it fulfils fairly well all the requirements of color, brilliancy, and steadiness. It is shaded, and is low enough to prevent the bright image of the flame from striking directly on the retina.

I cannot here go more fully into these questions of general ocular hygiene; they are, in my judgment, very important matters, not only in squint cases, but

also in the prophylaxis of myopia. The effort of the physician should be to prevent rather than to cure disease, and when the laity, through a better understanding of physical processes, are able to grasp this truth, and will take the trouble to find out how properly to care for their eyes and the eyes of their children, our endeavors to ameliorate by surgical methods the results of neglect will no longer be necessary.

In the majority of cases of strabismus, the treatment thus indicated will, I am sure, prove successful, yet there are some in which, after a patient trial, we fail utterly to obtain a good result, or in which, for some reason peculiar to the case, we wish to avoid delay. In such, operation will be indicated. If possible, the operation should be performed under cocain anesthesia. With most children, however, this is impracticable, for though we can render the procedure painless, we cannot without force keep a young patient reasonably still, and therefore must resort to ether.

In operating, I always aim at an under-correction of the defect. The immediate result is not so brilliant, but the after-result is better. This is particularly true of children whose orbits are near together, for as the face develops and the orbits diverge, the consequent change in the relative position of the eyes may convert an immediately successful result into an over-correction. This danger, however, is reduced to a minimum by the modern operation of tenotomy. It is not unusual to find a disfiguring over-correction from the older operation of myotomy, but after a tenotomy this is rarely seen. A relative insufficiency, however, may result from a too free division of the interni. I will not discuss the technic of the operation, nor the relative advantages of tenotomy and advancement. Whatever the operative procedure is, the aim should be the establishment of binocular fixation, as well as removal of the deformity, and the patient should not be dismissed as cured until we can demonstrate by the use of the stereoscope that this object has been attained.

PRESSURE NEURITIS CAUSED DURING SURGICAL OPERATIONS.

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WITHIN the past two years my surgical colleagues have referred to me a number of cases of painful, localized paralysis, which first had been noticed immediately after recovery from anesthesia. As this totally unexpected sequel of operation has always been disheartening to the patient and annoying to

the surgeon I wish to call attention to the possibility of its occurrence, and to the necessity of taking certain simple precautions which will prevent it. In all the cases except two, the paralysis was in one arm. The following will serve as an example:

N. H., male, aged thirty-four years, general health good. Nine days before examination he was operated upon for varicocele, under ether. Immediately after recovering consciousness he discovered that his left arm was numb, heavy, and weak. Since then the arm has been useless, and a stinging numbness has been felt which delays his going to sleep at night, but only rarely is severe enough to wake him after he has once fallen asleep. All the joints of the arm can be moved, but only feebly and with difficulty. Movements of the shoulder and elbow are as weak as those of the wrist and fingers. Inability to raise the arm (paralysis of the deltoid) or to place it behind the trunk (paralysis of the latissimus dorsi) is especially annoying on account of the interference with the act of dressing. The faradic reactions are retained, and there is no wasting or other trophic symptoms.

Here, the whole brachial plexus was evidently damaged at the time of operation, and there can be no doubt that it was due to the arm having hung over the edge of the table so that the nerve trunks were subjected to pressure, probably for some time. In the other cases I have seen, the explanation of the condition has been the same. The recent introduction of narrow operating-tables, with sharp edges, and the scant covering for the table which is often deemed sufficient, seems to me to have greatly increased the liability of the occurrence of this accident; nevertheless, I have not seen this cause mentioned in the literature of neuritis.

In the foregoing case the prognosis is good. The absence of complete paralysis, severe pain, and change in the electric reactions makes it highly probable that in a few weeks the arm will have recovered. But not all cases of this kind are so favorable, although ultimate recovery is nearly always to be expected. A young woman who, after a comparatively trifling gynecologic operation, suffered in the same way, but who had severe pain, glossy edema, and some loss of faradic irritability, did not recover full use of her arm for several months.

The operating-table used at one of my operations had an edge which was raised above the general surface. The patient, a woman in poor general health, lay in such a position that the left knee rested on this edge. The external popliteal nerve undoubtedly was compressed against the fibula, for immediately after recovery from the anesthesia, she complained of the usual numb, stinging pain in the area comprised in the distribution of this nerve, and there was well-marked foot-drop. The anterior tibial and peroneal

groups of muscles wasted, lost faradic irritability, and gave the reaction of degeneration to the galvanic current. Ultimate recovery ensued, but at the end of two months, when the patient left Denver, it was still incomplete. In another case the pressure of Clover's crutch caused neuritis of the external popliteal, which fortunately subsided after a few weeks.

Little need be said of the means of preventing such unfortunate accidents when attention has been called to the possibility of their occurrence. The patient's arms should not be allowed to hang down, and care should be taken that during operation the weight of the body is as evenly distributed as possible. Keeping the patient in any constrained position should be avoided when not absolutely necessary, and the use of any mechanic contrivance for maintaining a desired position should be with due care to prevent nerves from being stretched or pressed upon. If neuritis does occur, the first indication is to secure absolute rest of the affected part during the early stage. At this time voluntary motion, massage, electricity, or any other excitant of muscle and nerve will do harm. When the pain and tenderness have subsided, counter-irritation, gentle rubbing, and the galvanic current may be used to advantage. The faradic current often is harmful, and is useless except as a means of diagnosis or as a counter-irritant applied to the skin.

CLINICAL MEMORANDA.

A CASE OF SARCOMA OF THE LUNG, WITH SYMPTOMS OF ADDISON'S DISEASE FROM INVOLVEMENT OF THE SUPRARENAL CAPSULES.¹

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CLINICAL REPORT BY DR. PACKARD.

THE case herewith reported is placed on record partly because of the rather infrequent occurrence of such massive malignant disease of the lung, partly because of the rarity of bronzing of the skin from carcinomatous and sarcomatous involvement of the suprarenal capsules. During life the diagnosis was made of primary malignant neoplasm of the lung, with secondary deposit in and destruction of the adrenals, and it was only after careful consideration of the pathologic conditions found at au-

¹ Read before the College of Physicians of Philadelphia, April 7, 1897.

topsy, and a histologic study that the word "primary" was omitted from our title.

The patient was a man, aged thirty-three years, who was admitted to the Philadelphia Hospital, July 1, 1896, suffering from cough and hemoptysis, which dated from December, 1895. He was a native of Holland, a day laborer by occupation.

When first seen in October, 1896, when I went on duty at the hospital, I was much impressed by his peculiar facies. His face expressed much suffering, his skin was of a peculiar sepia color, his mucous membranes were exceedingly pale, and his sclera of a remarkably blue color.

His father died at the age of fifty-three years of "dropsy;" his mother, three brothers, and a sister, are alive and well. All of his family are said to be of a dark color. He had the ordinary diseases of childhood, but was never seriously ill until the onset of his present trouble, and always considered himself a healthy man. He never used alcohol immoderately, never contracted venereal disease, and had received no injury.

His present illness dated from December 23, 1895, although he had had a hacking cough for some time before. On the date mentioned it was noticed by his landlady that there was some blood in his expectoration, although he himself had not noticed it at this or at any prior time. Soon after this he noticed pain in his right side, a new symptom in his trouble. These symptoms—cough, hemoptysis, and pain in the right side of the chest—had continued with increasing severity until the time of examination. In February, 1896, he began to have severe pain in the right leg, especially in the knee. This pain continued with great intensity until his death. Careful and repeated questioning failed to elicit any history of increasing darkness of skin, and the patient frequently declared that his skin always had been dark.

Early in October the following notes of his condition were made: "He is thin to emaciation. The attitude when sitting on a chair is constrained, the weight being thrown to the left side, the hands being held on the arms of the chair in order to overcome the jar produced by coughing. When in bed the decubitus is on the right side, with the right thigh and leg strongly flexed. The slightest movement of the trunk or right leg causes excruciating pain, so that without an anesthetic thorough examination of the right hip is impossible. The breathing is hurried, shallow, and frequently interrupted by a smothered cough. The radial pulse is equal on the two sides, rapid, and compressible. The face is drawn and sad, the skin of the face light olive or sepia in hue, the upper eyelids very dark. The mucous membrane of the mouth is very pallid and shows no area of pigmentation. The sclerae are very blue, the pupils equal and natural. The right side of the neck is decidedly fuller than the left, from the presence of two or more enlarged supraclavicular glands.

"The skin of the trunk is very dark. On the front of the chest on the right side are two darker areas, an inch and a half square, said to be the result of two blisters that were applied six weeks ago. The pigmentation in these areas is very decided, not being produced by

the hyperemia and pinkish discoloration ordinarily seen after the use of blisters, but of a dark-brown color. Over the right half of the thorax at the base there is a larger but rather less deeply pigmented square area which marks the site of a mustard plaster applied one or two weeks ago. (These areas remained of the same or possibly of a darker color until the time of the patient's death.) The areolæ of the nipples are very dark, and there is a slight increase of pigmentation in the axillæ.

"The thorax is long, the downward curve of the ribs being very marked. The costosternal angle is very acute. On both sides the clavicles stand out prominently, from sinking of the upper portion of the chest. The right side moves but little during respiration; the left shows rather exaggerated respiratory excursion. The heart is in the normal position; the area of cardiac dullness is unaltered from the normal, so far as can be determined, and the heart-sounds are clear and free from murmurs. Over the right chest anteriorly the percussion-note is absolutely flat, with great increase of resistance to the percussed finger. This flatness and increase in resistance is possibly more marked above the fourth rib than below that point. The dividing lines between the toneless note over the lung and that due to the heart and liver cannot be determined, although a slight difference in the pitch at the upper border of the seventh rib on the right perpendicular nipple line would seem to indicate the upper border of the hepatic area. The liver dullness extends downward to the costal margin. The percussion-note over the left lung anteriorly is exaggerated except immediately below the left clavicle, where it is impaired. The area of splenic dullness is normal. Over the right side anteriorly there is absolute silence on auscultation save in the infraclavicular region, where there is distinct cavernous breathing over a small area. Vocal resonance and tactile fremitus are absent, except over the area of cavernous breathing, where there is poorly developed bronchophony.

"Posteriorly the examination shows a decided deviation of the thoracic spine to the left, and marked pigmentation over the sacrum. The right lung posteriorly and in the axillary region is dull, almost to flatness, with great increase of resistance, showing absence of breath-sounds except near the root, where there is distinct bronchial breathing, with numerous moist râles. Over the left lung there is exaggerated resonance, with puerile breathing.

"The abdomen is scaphoid, but is otherwise negative, there being no marked increase of pigment beyond that of the whole surface of the body. No tumor-mass can be felt. The external genitals are very dark. Examination of the right knee shows merely slight fulness on each side of the patellar tendon, there being no floating of the patella, and, so far as can be determined, no abnormal range of movement. The right leg shows no other abnormality, but careful examination of the hip cannot be made without an anesthetic, owing to the great pain caused by the slightest manipulation."

The urine, save for a high specific gravity (1025) was normal. Examination of the eye-grounds was negative except for a high degree of choroidal pigmentation, possibly not excessive for a man with normally rather dark-

coloring and black hair. Laryngeal examination was entirely negative. Examination of the blood showed simple anemia with equal moderate reduction of the red cells and hemoglobin, and no leucocytosis.

The sputum was somewhat peculiar in that it was tough, apt to be expectorated in clumps, and was of a peculiar white color. It was on one or two occasions slightly streaked with blood, but at no time had the currant-jelly appearance or grass-green color. No fragments of growth could be found in it, the only peculiar fact noted being that there was much amorphous, granular material, and detritus in addition to a small number of pus-corpuscles. (The examination of sections of the lung shows clearly why tumor-tissue could not be recognized in the broken-down granular material which probably composed the greater part of the expectoration.) Tubercle bacilli were never found during repeated examinations.

During the entire time of his hospital life the patient had a very irregular temperature, with constant evening exacerbations of from 1.5° to 2° F. It attained 102° F. in the evening on a few occasions, but the average evening temperature was $101\frac{2}{3}^{\circ}$ to $102\frac{2}{3}^{\circ}$ F. That of the morning was from $97\frac{2}{3}^{\circ}$ to $99\frac{2}{3}^{\circ}$ F. The pulse was uniformly rapid, being constantly above 105 to the minute.

The appetite was poor, the bowels usually regular, but at times moved too frequently. Some sweating at night was present at times, but it was not excessive, and it was not out of proportion to his debility.

The conditions noted above persisted until the time of his death, with the exception of the physical signs over the right lung. At each examination after that first made there was constantly absolute dulness, with complete silence over the whole right lung. The abnormal pigmentation noted in areas on the chest slowly but continuously became darker until death. About a week before death the feet and legs became swollen to a marked degree, the edema being soft and deeply pitting. During the last twenty-four hours of his life the breathing was of the Cheyne-Stokes' type. Immediately before death internal strabismus was present, but of which eye is not stated in the notes. Death occurred, apparently from asthenia, on November 13, 1896.

The diagnosis made during life was primary tumor of the right lung, with secondary involvement of the adrenals. The only other condition seriously considered was inflammatory thickening of the pleura from tuberculous infection, with concomitant fibrocaseous change in the adrenals. The negative result of the sputum, it was thought, might have resulted from loss of function of the right lung from compression by the thickened pleura and consequent absence of expectoration from the diseased lung; but further observation demonstrated that the amount of sputum was too great to be accounted for by the slight physical signs on the left side of the thorax. The constant absence of tubercle bacilli from the expectoration, in spite of repeated careful examinations, allowed but three lesions to be considered as possible causes for the physical signs present in the right side of the chest—primary endothelioma of the pleura, tumor of the lung itself, and non-tuberculous thickening of the pleura. The

latter was excluded by absence of retraction of the right half of the thorax, by the previous history of the case and the course of the disease, by the presence of an enlarged lymph-node above the right clavicle, and by the involvement of the adrenals. The history of quite early hemoptysis pointed to tumor of the pulmonary parenchyma rather than to endothelioma of the pleura.

As has been said above, careful examination of the right hip and thigh was impracticable without anesthesia, on account of pain, and the condition of the patient did not warrant either causing pain or administering an anesthetic. Owing to the apparently normal condition of the bones on superficial and hasty examination, the possible bony origin of sarcoma, with secondary pulmonary and suprarenal involvement, was not considered in making the clinical diagnosis. It might be added that after the patient's death, as his body was being turned on the back, the right femur suddenly snapped at its upper portion. It is, therefore, on the whole, well that thorough manipulation and handling of the thigh and hip for diagnostic purposes was not attempted during life.

PATHOLOGIC REPORT BY DR. STEELE.

Autopsy held at the Philadelphia Hospital seven hours after death.

There is a considerable increase of pigmentation on the face, hands, and genitalia, though not marked upon the hands. The scrotum is of a light sepia color. There is no discoloration of the mucous membranes. Dark hair and dark eyes. There is a scar behind the great trochanter of the femur, which is sharply and distinctly pigmented and is of a dirty-brown color.

Abdominal Cavity.—There is a hard mass in the head of the pancreas, about the size of an English walnut, which, however, is not adherent to any of the surrounding structures. The mesenteric glands are slightly enlarged, but do not seem to be affected by the new growth. In other respects the relations of the abdominal cavity are normal. The liver extends to the fourth interspace above, 2.5 cm. below the costal margin in the midclavicular line and 9.5 cm. in the median line.

Heart.—Relaxed. The ventricles are distended by hard, white coagula. The myocardium is pale and somewhat fatty. The valves and endocardium are normal.

Pericardium.—Normal.

Pleura.—The two layers are tightly adherent over the whole of the upper and middle lobes of the right lung. When traction is made upon the adhesions the visceral layer of the pleura separates from the lung over an area of degeneration in the middle lobe. In one place the cavity formed by the softening has ruptured into the pleural sac. The degeneration is evidently due to a new growth. The pleural sac upon this side contains 300 cubic centimeters of a blood-stained fluid, in which are floating masses of degenerated tumor-tissue which somewhat resemble blood-clots. The left pleura is free from disease.

Lungs.—The right lung upon examination is seen to be extensively infiltrated by the tumor-mass. The entire middle lobe and the lower half of the upper lobe are de-

generated and cystic. The pleura is thickened over the affected areas and studded with hard, white nodules. Similar nodules are seen in the lung-tissue around the edges of the degenerated areas. The upper part of the lower lobe is somewhat infiltrated, and is exceedingly congested throughout.

The left lung is normal. The bronchial lymphatic glands at the root of the right lung are much infiltrated.

Spleen.—Measures 11 x 12.5 x 2.5 cm. The organ is softer than normal. The pulp is semifluid and easily removed. There is a hard, white nodule about the center of the organ. The center of the nodule is slightly hemorrhagic.

Suprarenal Capsules are both much enlarged, the right especially so. Both capsules are studded by dense, white nodules which in some places are commencing to soften in the center. They vary in size from five to ten millimeters in diameter. There is an especially large nodule at the apex of the right capsule which appears to be hemorrhagic. To the naked eye there does not seem to be any remains of the normal tissue of the capsules.

Kidneys are normal in size. The capsules strip readily. The pyramids and medullary rays are congested. In one of the central pyramids of the left kidney is a hard, white nodule measuring three millimeters in diameter. The cortex on both sides is of the normal width and presents nothing of interest.

Ureters, Bladder, Rectum, Duodenum, and Stomach are normal.

Pancreas.—Thickly studded with nodules, especially at the head. Some of these are hard and white, while several show areas of softening in the center. The common bile-duct is surrounded by new growth. This apparently compresses it, but does not infiltrate its wall.

Thyroid Gland.—Normal.

Supraclavicular Lymph-Glands are enlarged, but do not seem to be involved by the new growth.

Semilunar Ganglia.—Of usual size and appearance; not involved by the tumor.

Intestines.—Normal.

Liver.—Uniformly and deeply congested. There are several white nodules upon the upper peritoneal surface of the right lobe which average eight millimeters in diameter. There are a few nodules scattered through the substance of the same lobe. There are irregular areas of a yellow color, evidently of a fatty change, scattered through the liver. The gall-bladder is distended by viscid bile and contains two semi-inspissated masses, which are dark-green in color and easily broken down. The common and cystic ducts are distended, but not markedly dilated. They average three millimeters in diameter.

Skeleton.—In the substance of the skull, in the parietal bone of the left side, is a round nodule, yellow in color and more transparent than the rest of the calvarium. On section this is found to lie in the diploe, is softened in the center, and resembles a new growth. It is one centimeter in diameter. The external table is pressed outward over this area.

The shaft of the femur on the left side, just below the anatomic neck, is much degenerated and breaks upon ex-

amination. The cause of the softening is evidently a focus of the same tumor-tissue seen elsewhere in the body. The whole shaft of the bone for eight centimeters below the anatomic neck is involved. The epiphysis is not affected. The growth shows much degeneration, and the softened material has formed a sac about the affected bone.

Brain.—Membranes normal. There is a recent apoplexy in the left crus cerebri, which has broken into the fourth ventricle. The clot is red and soft and perfectly homogeneous, and does not suggest a neoplasm. It is limited to the fourth ventricle and the crus.

Microscopic Examination.—A portion of the femur was decalcified, and the sections stained by hematoxylin and eosin. The tissue is in such an advanced stage of degeneration that it is the exception to find an area in which the nuclei take the stain. There is considerable osteitis and resorption of bone, and the only traces of the original structure of the part are scattered areas of bone-tissue. The sections contain much connective tissue, which appears to represent the periosteum. This tissue is hyperplastic, as shown by the number of round cells which it contains. In some areas there are alveoli which are packed by cells of a great variety of shapes. Some are large, round cells, with vesicular nuclei; others are spindle-shaped, with oval nuclei; others are small and lymphoid in character. An occasional giant-cell is found. In many places the nuclei have ceased to stain. The cells are degenerated, and are rounded and indefinite in outline. In many fields nothing can be seen but granular debris. The arterioles of the part show some thickening of the intima.

No sections were cut from the growth in the skull. Sections taken from the thickened visceral pleura show much round-celled infiltration and hyperplasia of the connective tissue. In places the collections of round cells are so considerable as to suggest sarcomatous tissue. The arterioles are thickened and surrounded by bands of connective tissue, but the areas of greatest inflammation lie around the lymph-channels. These vessels are much dilated, their walls are thickened, and they are surrounded by much round-celled infiltration. Their endothelial lining is thickened, and the lumen is packed by desquamated cells, between which there is a considerable amount of pigment. The endothelial cells are seen only in the lumen of the channels, and have not infiltrated the tissues. In nest-like spaces in the proliferating connective tissue are collections of polymorphous cells similar in the three main types to those of the growth in the femur. Giant-cells are rather more numerous. There is much degeneration of the nuclei of the polymorphous cells. Some show a condition of karyolysis with fragmentation of the chromatin; in others the nuclei are vacuolated, and in others there is hyperchromatosis, with lumping of the chromatin.

The nodules in the pleura and lung are found to consist entirely of cells of the most varied shapes, but which follow in general the three main types which are found in the other organs. There are also a few giant-cells, perhaps three or four in each microscopic field. The lymphatics are somewhat dilated and contain pigment, but

desquamation of the epithelium is not a prominent feature, though present in some places.

We have considered the significance of the dilatation of the lymph-channels and the desquamation of the endothelium found within them, and think that the condition is not one of new growth within the vessels, but a lymphangitis, probably caused by dilatation of the network of the lymph-vessels of the visceral pleura, produced by obstruction to the lymph-stream by the new growth. In support of this view is the fact that the evidences of inflammation of the pleura are much more marked around the lymph-radicals than around the smaller branches of the pulmonary artery.

The pancreas shows many nodules, consisting of the polymorphous cells described in the lung and femur. The degenerative changes in the chromatin are not as advanced as in the places already described. Here, also, giant-cells are found in moderate numbers. The small nodules in the liver consist of collections of cells similar to those described. Giant-cells are present.

In the right suprarenal capsule the tubules of the cortex show much degeneration. Many of the nuclei are fragmented and the cells are desquamated and granular. The connective tissue of the gland is hyperplastic and surrounds the tubules with dense bands of fibrous tissue. The nodule, described as softened and hemorrhagic, is found to be a focus of the tumor growth, similar to those described elsewhere. Into the mass there has been a profuse hemorrhage which has pushed aside the cells in a remarkable manner. There is very little fibrin present, and the red cells retain their outline unchanged. We consider, therefore, that the hemorrhage occurred but a very short time before death.

In the left capsule the cells of the gland are somewhat degenerated, and there is a slight hyperplasia of the fibrous tissue, but the changes are not as advanced as on the right side. The nodules scattered through both organs are found to be foci of sarcomatous cells, as described in the other organs. We estimate, however, that about one-quarter of each gland is unaffected by the tumor. The semilunar ganglia and nerves of the solar plexus were not involved in the growth, and on microscopic examination show nothing abnormal.

The skin shows many pigment granules which lie in and between the cells of the corium, but are very little, if at all, in excess of those found in the normal skin.

The pathologic diagnosis seems to us to be clearly that of a giant-cell sarcoma of the mixed type. The question of the primary seat of the growth has been most perplexing. The fact that but one lung is affected would suggest that the process might have originated in the lung; but we have concluded that it was primary in the femur for the following reasons:

1. It is a mixed sarcoma. The tumors of this class arising from the periosteum are usually of this type, while those originating in the lung are oftener of the small, round-cell variety.

2. Giant-cells are present in all of the sections. While these cells are not exclusively confined to sarcomata of bone, they are much more common in this locality.

3. The advanced condition of degeneration in the femur suggests that the tumor had been growing there for a longer time than in the lung, for the reason that such a condition would cause more rapid breaking-down in the softer tissues of the lung.

The sequence of events seem to us probably to be as follows:

1. Primary involvement of the periosteum of the femur.
2. Secondary growth in the lung, with extensive degeneration.
3. Metastases through the degenerated efferent pulmonary vessels to the left heart, and through the arterial circulation to the various organs.

The cerebral hemorrhage, from its small extent and from the evident freshness of the coagulum, seems to us to have occurred in the agonic period.

NOTES ON THE OPERATIVE TREATMENT OF COMPLETE VAGINAL AND UTERINE PROLAPSE; WITH REPORTS OF TWO CASES.¹

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THERE are few ills if any that womankind is subject to, other than malignant disease, which produce greater disability and discomfort than procidentia of the uterus, or, when the uterus has been removed, of the vaginal wall, accompanied as it is in the first instance by chronic inflammatory changes of the organ and, in either case, by the displacement of both bladder and rectum, with marked interference of their functions, this often being followed by cystitis and proctitis. The condition under consideration is that of a reducible hernia through the pelvic floor, and, as is well known, the most frequent cause of the difficulty is an unrepaired rupture of the perineum and an inability on the patient's part to confine herself to bed for a proper length of time after the birth of her child, thus causing a strain on the relaxed ligaments by the enlarged and heavy uterus. Therefore, it may be said that we have first a damaged perineum, accompanied by constipation, then a rectocele, then a cystocele, and finally the gradual escape of the uterus from the body. The sign of the disease is a local tumor, and the chief symptoms are backache, bearing-down pains, difficult and painful micturition and more or less inability to walk.

The patient on coming under our control should be placed in bed, and the parts reduced and held in position by tampons previously moistened with boroglycerid solution, attention being paid to the intestinal canal and bladder. The mechanic devices for the relief of the condition are numerous; the best may be said to be Gehrung's pessary and Braun's colpeurynter, but in the writer's opinion, the treatment, in a majority of instances, should be in the line of restoration of the damaged parts to their normal condition. If the patient is seen before the uterus has de-

¹ Read at the Thirteenth Annual Meeting of the Fifth District Branch of the New York State Medical Association, Brooklyn, May 25, 1897, and before the Waterbury Medical Association, June 14, 1897.

scended very far, an operation on the posterior and anterior walls may suffice, but when the prolapse is complete, additional means must be employed if we would permanently retain the displaced parts in their proper place; and it is the especial object of this paper to call attention to two of the more recent procedures that have been devised to enable us to accomplish this purpose, *viz.*, those of Baldy and Fritsch. In connection with this subject a report of the following cases will prove of interest:

CASE I.—On October 23, 1896, A. M., a widow, thirty-eight years of age, was admitted to the gynecologic service of the City Hospital. She said that she first menstruated during her fifteenth year, that the periods had been regular, and that the flow had ceased after the performance of an operation at another hospital about a year before. She had never miscarried, but had borne three children, sustaining an injury, due to the use of instruments, at her first confinement, which took place about eleven years prior to her admission. It was for the relief of this condition which, from the patient's description, appeared to be due to prolapse of the uterus, that the operation previously alluded to was undertaken. She also said that she was unable to retain her urine. On examination, a mass about six inches in length and four inches broad was found protruding from the vulva. The tumor proved to be the inverted vagina containing intestine and bladder, the latter holding twenty ounces of residual urine. The mucous surface of the vagina was dry but not ulcerated. The cervix was absent, but in its place there was a scar which showed that a vaginal hysterectomy had previously been performed.

On November 2d, after the patient had been prepared in the usual manner and anesthetized, the peritoneal cavity was opened by an incision in the abdominal wall to the left of the linea alba, and after the ovaries had been removed and the adhesions connecting the intestines to the vaginal sac broken up, the sac having been replaced and being held up by an assistant, the patient lying in the Trendelenburg posture, the vagina was attached to the remaining portions of the round and broad ligaments on each side by means of heavy silk sutures. The wound in the abdominal wall was then closed and ordinary dressings applied. The patient next was placed in the lithotomy position and an area two inches in diameter on the anterior vaginal wall was denuded of its mucous membrane. Beginning in the center of the denuded area and working from above downward tier-sutures of chromicized catgut were inserted, which caused the cystocele to disappear, a ridge of enfolded tissue being left along the anterior vaginal wall. The cut edges of the mucous lining of the vagina were then brought together by means of a purse-string suture of heavy silk after the method of Stoltz. Attention was next paid to the posterior vaginal wall and perineum. The flap-splitting method of Tait was employed, the dissection, however, being carried well up to the crest of the rectocele. After this had been accomplished, the parts were brought together by means of buried sutures of silkworm gut.

Convalescence was uneventful, with the exception of slight stitch-infection at two points in the abdominal wall.

On November 26th the patient was out of bed and about the ward, and her local condition was in every respect satisfactory. During April, six months after the operation, she was examined by the writer who found her perfectly well, she having regained full control of the bladder.

CASE II.—On November 17, 1896, M. R., a widow, sixty-six years of age, was admitted to the gynecologic service of the City Hospital. Menstruation had first occurred during her fifteenth year and had continued at regular intervals until her fiftieth; it was painless and of the monthly type. She had borne four children. There was no history of a miscarriage. She had enjoyed good health until about three years before when she had been knocked down and trampled upon by a horse, the animal planting its forefeet upon her abdomen. Soon after this occurrence she noticed that a tumor, which gradually increased in size, projected from the vaginal orifice. She had suffered from prolonged constipation, sometimes not having a bowel movement for sixteen days. This condition was usually followed by diarrhea. She also had been troubled with incontinence of urine.

Examination revealed the presence of a tumor about five inches in length which projected from the vagina, giving to the vulva the appearance of elephantiasis. At the apex of the tumor there were several points of ulceration. The condition was diagnosed as one of complete uterine prolapse. As the patient was very feeble and anemic, and the urine was of low specific gravity and contained albumin, pus, and casts, it was decided that operative measures should be deferred. After a thorough cleansing of the inverted vaginal surface and ulcerated cervix with a solution of hydrogen dioxid, the parts were replaced and retained by means of cotton tampons previously soaked in a boroglycerid solution, which were removed and replaced from time to time. The bladder was catheterized every eight hours, and washed out with a boric-acid solution, and the bowels gradually unloaded by means of enemata and repeated small doses of calomel continued for several days at a time. Later, tonics, especially iron and strychnin, were given. Under this treatment the patient's general and local condition gradually improved, and during January, 1897, as she was anxious to be up and about, and as various futile attempts had been made to hold the parts in place by means of pessaries, it was decided to make an effort toward affording her permanent relief. As her general condition was such that the induction of general anesthesia was unwise, it was determined to rely on other means for the relief of pain during the operation, the method devised by Fritsch being the one best suited to the case. The patient's age made the obliteration of the vaginal canal unimportant.

On January 18th, after a hypodermatic injection of one-third of a grain of morphin had been administered, and she had been properly prepared, the cervix was seized with bullet-forceps and drawn down, and a small quantity of a weak cocaine solution injected under the mucous lining of the vagina. A buried suture of silkworm gut was then carried around the vagina a little above the cervix and the latter was pushed up. The suture, the ends of which

emerged from the same opening, was then drawn tight, tied, and the ends cut off short, causing the knot to disappear from view, and to be buried in the tissues. This procedure was repeated until six similar sutures had been placed, encircling the vagina at various points, which resulted in an entire obliteration of the prolapsed tissue and of a greater portion of the caliber of the canal. The perineum was split according to Tait's method, and the cut surfaces drawn together by means of several sutures of silkworm gut. During the operation the patient hardly complained of pain, and there was little or no evidence of shock. On January 25th the perineal sutures were removed, and convalescence was uneventful. On January 30th, twelve days after the operation, she was up and about the ward. She was seen by the writer during April, and her local condition found to be satisfactory. Her general condition also was much improved as she had regained control of both bladder and rectum.

The chief points of interest in the first case are, first, the procidentia of the vaginal wall following vaginal hysterectomy, which apparently had been undertaken for the relief of uterine prolapse. This condition, however, more frequently follows the removal of the uterus by the technic ordinarily employed, whether by the vaginal or abdominal route, than is generally supposed. In the second place, the laparotomy undertaken for the purpose of breaking up the intestinal adhesions and of attaching the replaced vaginal walls to the stumps of the broad and round ligaments near the pelvic brim on each side, prior to the performance of the operations on the vaginal walls, is worthy of note. This procedure is in line with Baldy's suggestion contained in an article, entitled "A New Operation for Uterine Prolapse," published in the April, 1896, number of the *American Journal of Obstetrics and Diseases of Women and Children*. He advises that in performing an abdominal hysterectomy, after amputating the organ at the internal os, the remaining tissue should be attached to the stumps of the broad ligaments on each side. The writer believes that this procedure is a good one, and that it should be employed in many cases of procidentia. For a number of years past he has endeavored to prevent the occurrence of a hernia of the vaginal walls following his operations for the removal of the uterus, for whatever cause, either by the abdominal or vaginal route, by closing the wound in the vaginal wall after attaching said wall to the stumps of the round ligaments. Another point of interest was the combined operation on the anterior wall.

The second case is of interest mainly because of the fact that it was possible to do all that was necessary for the patient's relief, notwithstanding her poor condition and inability to take a general anesthetic, with little or no pain, and that no unpleasant symptoms resulted from the procedure. It is also interesting to note that the permanent buried sutures in the vaginal wall, while retaining it in a good position, did not give rise to discomfort. This case would appear to demonstrate the fact that no matter how old or feeble a patient may be, or how bad her local condition, the case should not be considered hopeless, nor should the patient be allowed to remain a suffering, bedridden invalid.

THERAPEUTIC NOTES.

Radical Cure of Epithelioma.—*The Med. Week* of June 11, 1897, contains an article on the above subject by CERNY AND TRUNECEK. The preparation employed by them is a mixture of arsenious acid with alcohol and water, as follows:

R	Powdered arsenious acid	.	.	.	1 part
	Ethyl alcohol	{	aa	.	75 parts.
	Distilled water				

The directions are to clean the ulcer thoroughly, although a few drops of blood are essential to the action of the remedy. The mixture is shaken, and applied with a brush. No dressing is needed. The arsenic mummifies the tissues and forms a crust, which grows thicker from day to day, as fresh applications of the mixture are painted over it. After the first crust comes away, the ulcerated surface is again painted, as at first. If on the following day there is the commencement of a new crust, the applications must be continued daily until this crust also comes away. If, however, on the following day there is only a thin, easily detached pellicle, then the cancerous elements are destroyed and the ulcer may be allowed to heal.

In the course of treatment, as the crust becomes thicker, the strength of the application may be increased with advantage from 1 to 150, at which treatment is begun, to 1 to 100, or even 1 to 80. To avoid contractions, the edges of the ulcer, when this is allowed to heal, are daily rubbed with boracic-acid ointment.

The writers report three cases of epithelioma of the nose cured in the manner described. One of the tumors was recurrent, one patient refused operation, and the other was refused operation on the ground that the growth was too far advanced for removal. Treatment lasted about three months, and the periods of freedom from recurrence have lasted now from six months to more than a year. Several other cases were treated without success, but in no instance were the directions faithfully carried out.

Combinations of Mercury for Subcutaneous Injection.—

R	Calomel	.	.	.	.	gr. xxiv
	Sterilized olive oil	.	.	.	.	$\frac{3}{4}$ i.

M. Sig. Fifteen minims to be injected once a week. This mixture should be sterilized at a temperature of less than 100° C. (212° F.)—*Fournier*.

R	Binioid of mercury	.	.	.	.	gr. iv
	Sterilized olive oil	.	.	.	.	$\frac{3}{4}$ ii.

M. Sig. Inject 15 to 30 minims every three or four days.—*De Lavarenne*.

R	Cyanate of mercury	.	.	.	.	gr. x
	Sterilized water	.	.	.	.	$\frac{3}{4}$ ii.

M. Sig. For intravenous injection, 15 minims; for subcutaneous injection, 25 minims.—*Abadie*.

A Skin Lotion.—DUHRING recommends the following preparation as a mild stimulating lotion for the skin:

R	Zinci sulphat.	{	aa	.	.	3 ss
	Potassii sulphuret					
	Spt. vini rect.	.	.	.	.	$\frac{3}{4}$ iii
	Aq. rosæ	.	.	.	.	$\frac{3}{4}$ iii ss.

M. Sig. To be diluted, as required, for external use.

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SATURDAY, SEPTEMBER 11, 1897.

THE ABUSE OF MEDICAL CHARITY.

THE matter of indiscriminate abuse of medical charity at nearly all of the dispensaries of this city is of such paramount importance to all who have the welfare of the younger members of the profession at heart that it calls for immediate and decisive correction. It has been claimed that at least three out of five of the eight hundred thousand patients treated free of charge at the dispensaries during the year 1896 were able to pay at least a moderate fee for the services rendered, and the correctness of these apparently incredible figures being granted, the question naturally arises as to with whom the blame for this condition of affairs lies. It is a characteristic of human nature to obtain as much as one can for as little expenditure of time, energy, or money, and, this being the case, the item of medical services is no exception to the rule. From a strictly moral standpoint, then, at the door of this class of patients must be laid the censure; but should it not equally be directed toward those who not only permit but encourage the evil? The question can be answered only in the affirmative.

Many excuses for the present dispensary system

have been made, and when all have been given careful consideration the fact still remains glaringly evident that to the almost complete lack of systematic investigation as to the merit of an applicant is to be attributed the present unpardonable condition of affairs. Underlying this apathy, or purposeful negligence, it would seem, are three factors, to one of which one must look for an explanation of the cause. These are (1) a desire to show in the annual report of the dispensary a great array of figures which will convey to an admiring public an adequate idea of the great and beneficent work being done; (2) in those dispensaries connected with teaching institutions, the desire to preserve a sufficiently large *clientèle* to assure for the students a varied assortment of clinical material; (3) the praiseworthy effort to furnish to those young physicians who have not had the benefit of hospital training subsequent to graduation an opportunity to obtain experience which, later, will fit them for the supposedly extensive and diversified exactions of private practice.

Concerning two of these factors but little need be said. When it is remembered that at the so-called teaching dispensaries, perhaps one patient in twenty applying for treatment is brought before a class of students, and that this patient in a majority of instances belongs to the unfortunate poor contingent for which the free dispensary originally was designed, and which, sooner or later, inevitably finds its way there, this argument will be seen to be untenable. As for the young physician being catered to and regarded with fatherly solicitude by the governing boards of dispensaries, things medical surely have reached a most millennium-like pass if this is to be accepted as true, but, unfortunately, it is not. But in spite of this, the fact remains that the budding practitioner does lay in a store of valuable knowledge which will stand him in good stead during his professional life, and without which he is distinctly inferior to the more fortunate ones who are armed with the strength of a hospital experience. But is it at all necessary to open wide the dispensary doors to all comers, irrespective of social state or worthiness, in order that this knowledge may be gained? Can it not be obtained through the medium of that worthy class in which disease is sufficiently rampant to encourage the physician, be he young or old, to bend his every effort toward its alleviation? The

economic side of the subject also must be taken into consideration, for, when this same young physician attempts to build up the lucrative private practice of which he has dreamed, will he not find that the dispensary to whose success, in the eyes of the public, he has contributed is a rival too strong to be downed?

In the absence of these two factors it would seem that the one first mentioned must be responsible for the evil as it exists to-day, and the mainspring of this condition can be nothing less than a desire for personal aggrandizement.

It has been claimed repeatedly that the amount of medical charity abuse has been grossly exaggerated by those who are making an honest effort to reform it. The report of the special committee appointed by the Medical Society of the County of New York to investigate this subject should be accepted as conclusive in this respect.¹ The concluding paragraph of that report reads as follows:

"In conclusion, your committee expresses the conviction that there is no species of charity so beneficent, so far-reaching, or so generously bestowed as true medical charity, and that nothing could be further removed from its wish than that it should be curtailed or kept from the reach of the deserving poor; but it has been so conclusively demonstrated that there exists such gross and unpardonable abuse of that charity on the part of those who are not entitled to it that it has become imperative to adopt radical measures for the suppression of that abuse, and at once."

In order to carry out measures of reform in this as well as every other matter so vital to the public weal, practical unanimity of action is necessary, and this appears to be impossible in the present instance except under the guidance of a fair and honest law which, in the end, will confer benefit upon both the physician and the deserving applicant for his gratuitous care.

MRS. GRUNDY'S STRAIT-JACKET.

MUCH has been written in condemnation of the corset-wearing habit, but the probabilities are that many more reams of paper will be filled by eminent medical authority before a full realization is obtained of the manifold evils which follow in its train. The effect of the corset is obtained not only by preventing the wings of the lower chest and sides from expanding in inspiration, thus compelling the dia-

phragm to drive the viscera directly downward, but also by cramping and preventing the contraction of the wall-muscles, causing the anterior abdominal wall to bulge out and distend below, until the tone of the recti is destroyed. In this the corset, of course, is ably assisted by the drag of the heavy skirts usually worn and the consequent crippling of the movements of the lower limbs due to their Laocoon-like folds. Moreover, as Stockton has pointed out, these displacements seldom or never occur before adolescence, when corsets are first applied, and, with that rare philosophic breadth of view reaching far beyond the limits of his own specialty, and typified by his persistent contention that the cause of a very large number of the disorders of the stomach lies entirely outside of the organ itself, this observer declares that in his experience not only are a great number of gastro-intestinal diseases dependent upon displacements of the viscera, due to loss of tone in the abdominal muscles, but that much of the "backache" and dragging-down sensation, so common in women, are of identical origin. The commonest factor in their causation is prolapse of the colon, kidney, or stomach, instead of the uterus, as has been popularly supposed.

But the most serious charge against this garment has been made latest of all. The extraordinary predilection of chlorosis and the simple anemias for the female sex, and especially during the ten years following puberty, has long been a puzzle to clinicians. Light was thrown upon the question by the statements of Sir Andrew Clark and Carpenter, when they asserted that it depends upon constipation and the absorption of putrefactive products from the food-canal—a "stercoremia," as the former called it; but the problem still remained, Why does constipation begin so suddenly and universally at this age-period? Now, however, Glenard comes forward with the bold statement that a large majority of cases of chlorosis are toxemias due to ptoses of the food-canal, and the time of first wearing the corset is the period most fruitful in them. His position has been sustained and even extended by Sigaud in France, Meinert in Germany, and Stockton in this country. Meinert has made an especially elaborate study of the subject, and asserts that chlorosis is a secondary anemia and the direct result of enteroptosis produced by improper clothing during the developmental period in

¹ See THE MEDICAL NEWS, May 29, 1897.

girls. The result of treatment directed to the ptoses strikingly corroborates this theory.

In view of these facts, one is justified in urging the profession to yet another onslaught upon this modern Moloch. Nor will mere condemnation and destructive criticism suffice. We must be prepared to suggest a substitute. The skirt must be greatly lightened, shortened (if possible, divided), and strictly limited to the purpose of an external decorative drapery, with no reference whatever to warmth. Petticoats should be entirely abolished, or at least reduced to a single one of silk or light flannel, and warmth and protection of the lower half of the body secured *entirely* by means of close-fitting drawers ("tights"), stockings, and bloomers. All garments must be supported from the shoulders, either by direct continuation, waists, or broad and elastic suspenders. The superiority of the Venus-de-Medici waist over the "Redfern" monstrosity, and of the grace of movement and elasticity over dead rigidity of outline must be insisted upon, and the love of beauty called to our aid. Every convention or habit, either of dress or behavior, which interferes with free play and development of all the muscles of the abdomen and chest-walls must be swept away.

The odds against us are heavy, but we have a new and powerful ally just now in the shape of the bicycle. As a writer in these columns remarked some months ago, the wheel "has already effected a breach in the rampart against which the profession and the pulpit have been thundering in vain." The heavy, crippling, and back-breaking skirt is going; may we not hope that the corset will be the next to follow?

ECHOES AND NEWS.

Medical Journals of Paris.—There are 120 medical journals published in Paris.

The Royal Victoria Hospital, Belfast.—The sum of \$500,000 has been raised to found a new hospital in Belfast in commemoration of the Queen's Jubilee.

Appropriation for a Bacteriologic Laboratory.—The Legislature of the State of New Jersey has granted an appropriation of \$3000 to the Bacteriologic Laboratory at Princeton.

Professor Koch and the Rinderpest.—It is reported that Professor Koch will return to South Africa in order to make further investigations and experiments in regard to rinderpest.

Typhoid Fever in Dawson City.—The news comes from St. Michaels, Alaska, that typhoid fever is epidemic among the miners at Dawson City, and that several deaths from the disease have occurred.

Beef from Cows Killed by Lightning.—A man was recently held in the Liverpool, England, city police-court for exposing for sale the carcasses of cows which had been killed by lightning. The meat was unfit for human food.

Premium for Twins.—A Brooklyn, N. Y., landlord offers a house and lot rent free to the first family among his tenants to whom twins are born. To the first family to whom triplets are born he will present a house and lot.

Inspection of Chinese Laundries.—An inspection of Chinese laundries has been ordered by the Health Commissioner of St. Louis, Mo., who fears that some may mouth-spray their work with tubercle bacilli and thus spread contagion.

Gold Medal for Professor Kolliker.—Professor Kolliker of Wurzburg has been awarded the Gold Comenius Medal by the Imperial Leopold-Carolina Academy of German Scientists of Halle, in commemoration of his eightieth birthday and jubilee of his appointment as professor.

Bellevue Hospital Medical College's New Building.—Plans for the new building of the Bellevue Hospital Medical College have been filed with the Building Department. It is to be erected on the corner of First avenue and Twenty-sixth street, adjoining the Carnegie Laboratory, and is to cost \$95,000.

Cerebral Hemorrhage and Wheeling.—A Syracuse, N. Y., woman, while making a run on her bicycle last week, was riding rapidly with her companions, when she suddenly threw her hands to her head and uttered a sharp cry. When lifted from her wheel life was extinct. A necropsy showed a ruptured vessel at the base of the brain.

To Care for Sick Plants.—In Berlin the Institute fur Pflanzen Physiologie und Pflanzen Schutz gives, without charge, advice and information regarding diseases and injuries of cultivated plants. It will also send agents to examine plants without charge beyond the railway ticket, which, in some instances, will be paid for by the institute.

Death of Dr. Cornelius Kollock.—The death is announced of Dr. Cornelius Kollock at his home in Cheraw, South Carolina, on August 17th. Dr. Kollock was graduated from the University of Pennsylvania just after the War and then went to Europe, where he studied under Velpeau. He was one of the most eminent physicians in the South and an authority on abdominal surgery.

Suspicious Death of the Late Shah's Physician.—It is reported in Paris that the death of Sir Joseph Tholozan, physician to the late Shah of Persia, was due to poison. For thirty years he was the trusted confidant of Nasr-ed-Din and it is supposed that his knowledge of court secrets made his removal desirable. He was a native of France and seventy-seven years of age at the time of his

death. His predecessor at the Court of the Shah also was poisoned, it is said.

The Record Broken.—What appears to be an authentic case of a woman who has given birth to four pairs of twins has been reported in St. Louis, Mo. The woman in question, who is only eighteen years of age, has lived in East St. Louis during the past five years and recently applied to Dr. Woods, Supervisor of the Poor, for food for herself and children, of whom all but three are dead. Dr. Woods carefully investigated the statements of the woman and found them correct.

Origin of the Bombay Plague.—It is generally believed that the plague was imported into Bombay from China via Singapore. However, Dr. Hutcheson, Sanitary Commissioner of the Northwest Provinces, thinks that it comes from the mountain region of Gurhwal, 3000 feet above the level of the sea, where it makes its appearance every year and is nurtured and perpetuated amid the filth which accumulates under and around the dwellings of the ignorant people who inhabit these otherwise healthy altitudes.

Roentgen Rays Made Harmless.—From time to time since the use of skiagraphy became general in medical and surgical practice unexpected effects have been observed to follow its application in a limited number of instances. That this malign influence upon the tissue is not a constant or necessary quality of the ray is evident from the fact that its disastrous results only occasionally appear. Without being able to offer a theoretic analysis of the problem Mr. Elliott Woods of Washington, D. C., has made the practical suggestion that a film of gold foil properly prepared will arrest the undesirable elements in the field of radiation.

The Leprosy Congress at Berlin.—Twenty-one papers on subjects of debatable interest will be read by invitation at the Leprosy Congress to be held at Berlin October 11th to 16th, next. Among them may be mentioned those of Professor Koch, on "The Place of Leprosy among the Infections;" of Professor Virchow, on "The Pathological Anatomy of Leprosy;" of Dr. Unna, on "The Histology of Leprosy;" of Professor Neisser, on "The Extent to which the Bacillus Lepræ Should Be Regarded as the Cause of the Disease;" of Professor Campana, on "The Cultivation of the Bacillus of Leprosy," and of Professor Besnier, on "The Value of Heredity and Transmissibility as Etiologic Factors."

Persecuting Chinese Laundrymen.—An enterprising proprietor of several laundries in the upper part of New York City has been circulating what purports to be a notice from the Board of Health warning people of the prevalence of leprosy in the Chinese quarter of the city. The circular is really an abstract from the report of the Board of Health for 1891, in which one of the health commissioners made mention of leprosy among the Chinese residents of New York. The object in casting it broadcast is evidently to deter people from patronizing Chinese laundrymen and in this way to increase the business of the afore-

said enterprising proprietor. The attention of the Chinese minister has been called to the matter, and he has already written to the Board of Health to ask for an explanation.

Sanitation and the Death-rate.—The last report of the Health Board of New York City shows an encouraging decrease in the mortality-rate, especially from diarrheal diseases. Even those districts whose inhabitants are most inimical to the exercise of sanitary laws show that great improvement has followed the enforced cleaning of streets and the regular removal of garbage. The condemnation and abandonment of tenement-houses which have heretofore successfully resisted the promulgation of the proper principles of ventilation and decent existence will even further improve the statistics. The Board of Health should always have encouraging support and popular appreciation of its laudable efforts.

"The Christian" and Matters Medical.—In his latest contribution to fiction Mr. Hall Caine has indulged in certain assertions which must strike his medical readers with consternation at the ruthless manner with which he brushes aside the time-honored principles underlying their science. Thus, when she is further unnecessary to his plot he staggers pharmacology by removing a flighty female with "half a grain of liquor strychnin." Medico-legal traditions are not less abruptly overturned in his description of a still-born child as "one that has breathed but never cried." In what a state of dismay must the plodding man of science await the further revelations of this rising genius.

Tuberculosis in a State Institution.—The Board of Regents of the State Agricultural College of Kansas has discovered that the domestic animals at the college farm are not only infected with tuberculosis but that the disease has been communicated to many of the attendants in charge. In at least three of those who reside on the farm the infection has brought them to Death's door. In view of the serious nature of affairs an order will be given for a general slaughter of the cattle at an early date, with provisions for *post-mortem* examinations. That such a state of affairs should be allowed to develop in an institution devoted to the teaching of scientific farming must bring humiliating reflections upon its sponsors.

The Private Madhouses of England.—Mr. George Russell, Under Secretary of State for the Home Department in the Roseberry administration, has inaugurated a movement calling for the abolition of private madhouses and will ask Parliament to take vigorous action to this end. He asserts that while in office he had exceptional facilities for studying the subject of private lunatic asylums, that they constitute the greatest iniquity in England, and announces that he will produce before the House revelations of the most startling character. Mr. Russell declares that a man should have no more right to keep a private asylum than a private prison; that the alleged inspection of such of these asylums, as are known, is a mere farce, and that the most incredible cruelties are perpetrated behind their walls.

Yellow Fever in Mississippi.—A well-authenticated report has just been received of the appearance of yellow fever on the coast of Mississippi, at a watering-place known as Ocean Springs. Suspicious cases have been observed during the last fortnight and as death has occurred in several instances, the character of the malady has been so well established that the Health Officers of the neighboring states have published the information and ordered rigid quarantine measures against the unfortunate resorts. At least one person, in whom the disease proved fatal, had returned to New Orleans before its nature was suspected, and many sensational reports of deaths in other places have been promulgated. It is safe to predict that most of these will not merit credence when carefully investigated. The Health Boards of Mississippi and Louisiana, as well as that of New Orleans, assert confidence in their ability to control the present outbreak. The source of the infection is not yet clearly established, but the quarantine station at Ship Island has been in close communication with Ocean Springs, and is naturally suspected, as vessels from subtropical countries where yellow fever is endemic constantly touch at this point for government inspection.

CORRESPONDENCE.

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

[From our Special Correspondent.]

THE TRIP TO MOSCOW—ENTHUSIASM OVER RUSSIAN HOSPITALITY—PERFECT ARRANGEMENTS FOR THE MEETING—THE FIRST GENERAL SESSION.

MOSCOW, August 20, 1897.

THE Twelfth International Medical Congress has been inaugurated under most favorable circumstances, and the general impression conveyed to the minds of those who have come so far to attend it is exceedingly satisfactory. Despite the immense number of travelers which the Russian railroads, unused as they are to handle great crowds, have had to accommodate, all reached Moscow in comparative comfort and nearly always on time. The comparison between the treatment received at the hands of the railroad officials of neighboring countries, such as Austria and Germany, by whom no reduction in fares was allowed, was distinctly favorable to the Russians. There was not so much huddling of passengers into crowded compartments for night rides, and very seldom were they required to travel in cars of the class below that for which they held tickets.

Any uneasiness as to personal inconvenience at the frontier vanished before the courtly reception of the Russian officials. At once the impression was conveyed that the doctors were the guests of the nation, and that everything possible was to be done to make them appreciate the fact. Nearly every one had come to Russia with the idea that passport and customs inspection at the border would be annoying at least, and all were agreeably disappointed to find that these expectations were not to be realized. As the president said, in his opening address at the first general session, it was the East of

Europe welcoming the West of Europe, but it was always *Europe*, and the greeting was not from stranger to stranger. As one penetrated further into the country, one realized that Russian hospitality is not merely a name. Those who came by way of Odessa found, more than one thousand miles from Moscow, a committee waiting to receive them, which had guides and carriages for them, and entertained them at a supper and concert in the evening. At Kiev a committee made the mysteries of the Russian language easy in the relations with the townspeople, and enabled the stranger guests to see the quaint and curious sights of the Jerusalem of Russia, the oldest holy city of holy Russia. At Warsaw the doctors from the West found other committees equally ready to make their visit a pleasantly memorable one. Meantime, the doctors themselves put up with the inconveniences of traveling in crowds with their usual good nature. The railroad restaurants were utterly unused to such crowds, and the scramble for food at the ordinary eating-places was a struggle for existence in which, in true Darwinian style, the weaker went to the wall. But everything came to him who waited, and Russian forethought had anticipated the difficulty and at other stations extraordinary preparations were made and all wants satisfied. Doctors are doctors the world over, and in a babel of tongues that defied elucidation the burning medical questions of the day were discussed. In the intervals, the foreigner read Tolstoi or the inevitable Bædeker, while some of our Russian confrères were dipping into our literature in order to comprehend us better when we should meet on the floor of the hall of debate. One whom I saw had "The Light that Failed," and another "Trilby." How thoroughly they were able to understand our characters after these literary experiences may well be imagined.

We really only understood all that the committee had done to make us at home when we reached Moscow. At once the Lodging Committee found rooms for us, all a little expensive, to be sure, for Moscow has more visitors than she ever had before, on a peaceful mission, at least. There are more than 10,000 here on account of the Congress, and 7500 of the number are physicians and their female relatives, more than one-half of the former being Russians. Germany and Austro-Hungary have each sent about 800 delegates, France 400, Italy about 400, England 300 (according to Sir William MacCormac), and the United States about 120. The arrangements for accommodating this immense crowd at moments when its members come together are excellent. The Central Bureau is in a huge building 500 feet long and 125 feet wide, built for the indoor maneuvering and inspection of troops. It has kindly been lent by the government. The general sessions are held in the Grand Imperial Theatre, which is probably the largest in Europe and seats more than 4000 people.

Every day about lunch-time most of the visitors meet in *La Manège*, the hall of maneuvers, and crowd it to its capacity, showing how useless would have been the effort to transact the business of the Congress in any ordinary building. Here are the post-office department,

a money-exchange office, the General Committee's office and the bureaus of the various sections, besides a restaurant. Nothing has been forgotten, and as time goes on, the enthusiasm over Russian hospitality waxes rather than wanes. The social features are to be such as the crowd can enjoy in its entirety. There has been a reunion, with supper for all, in the galleries of the Hall of Commerce, and a musical soirée in a public garden and a ball at the Noble's Club, another of Moscow's large buildings, are to be given next Monday.

The first general session was presided over by the Grand Duke Sergius Alexandrovitch, governor-general of Moscow, who has ably seconded the committee in all its efforts to make the Congress a success. The Grand Duchess occupied one of the boxes with the ladies of her suite. The first part of the proceedings consisted in listening to the greetings of the delegates of the various governments to the Congress. The German ambassador, General Rohler, brought the assembly to its feet when, at the end of his greeting, he called down a blessing on the Czar. It is the imperial generosity and liberality which has made the success of the Congress and a becoming exhibition of Russian hospitality possible. Mention of the name of the Czar frequently called forth enthusiastic applause. It was the "Little Father" of all the Russians, not the absolute monarch of the two Russias whom the cultured though heterogeneous assembly united in applauding.

It had already been announced that the trip to St. Petersburg and return would be free, and the representative of the municipal council of the city invited the delegates for the three fête days, the 28th, 29th, and 30th of August. Moscow, he said, is the heart of Russia, but they would find in the North that while the head might deliberate the welcome would be as cordial.

The preliminary business of reception being over, Virchow advanced and received an enthusiastic ovation from the immense audience that showed how much the medical world appreciates the labors of the grand old man of medicine. Instead of speaking, as announced, on "The Rôle of the Vessels in Inflammation," he reserved this theme for his paper before the Section on Pathology and spoke of "The Continuity of Life as the Foundation of Biology and Pathology." It gave him the opportunity to trace the rise of the cellular pathology with which he has had so much to do, and to review the stormy discussions which have divided scientific opinions during the second half of the century. When he reviewed spontaneous generation he paid a glowing tribute to Pasteur, which was the signal for prolonged applause. He complimented the medical world on the fact of having educated public opinion, so that now unfounded theory does not receive so ready acceptance as in the early part of the century. Much remains to be done, but still no minister of public instruction would want to found in our day a professorial chair at the University for Animal Magnetism, as was done during the Forties. Theory is giving place to science at last, and more and more is being attributed to living agencies rather than to dead chemic or other scientific forces. This is the line of true

progress, and he who studies serum as serum for its chemic constituents, and not as the result of the forces which made it, is sure to go wrong. The talk was delightfully discursive, as the reminiscences of the veteran recalling the half century in medicine *quorum ille pars magna fuit*.

Lannelongue reviewed the sclerogenic treatment of tuberculous abscesses, but made the old subject new, in a charming French address, which made one think, when the end was reached, that surely at last the millennium had come in the treatment of cold abscesses. Then Lauder Brunton, on "The Relations between Physiology, Pharmacology, Pathology, and Practical Medicine," vindicated the claims of chemistry to the gratitude of medicine. As time went on this debt became greater rather than smaller, and now the physiologic processes are resolved into chemistry, and pathology has taken to chemic explanations of disease in the study of the toxins. For him, the horizon of medicine is everywhere *chemistry*, and so, on the same day, at a general session of an International Medical Congress, the last of the Nineteenth Century, there are two essentially opposite opinions as to the lines of the development of medicine.

OUR VIENNA LETTER.

[From our Special Correspondent.]

THE GENERAL ASSOCIATION OF AUSTRIAN WOMEN AND THE REGULATION OF PROSTITUTION—BARON ROTHSCHILD'S BLOOD AND THE TENDENCY TO FORM MONEY ROULEAUX—KOCH'S NEW SERUM NOT MEETING WITH APPROVAL OR SUCCESS—THE APE COLONY AT SCHONBRUNN AND THE CONTAGIOUSNESS OF TUBERCULOSIS.

VIENNA, August 22, 1897.

SHORTLY before the close of Parliament a petition was presented to that body on the part of the Allgemeiner Oesterreichischer Frauenverein (the General Association of Austrian Women) asking for the abolition by law of the licensed houses of prostitution in Vienna. The petition was laid on the table by the committee to which it was referred in the ordinary course of parliamentary routine, but not until some remarks had been made which found their way into print, and which were to the general effect that the women should mind their own business. Some remarks on the petition, its signers and its contents were made after the adjournment of Parliament in the *Wiener klinische Wochenschrift*, and these were answered by two prominent members of the Women's Association in the last number of the *Wiener klinische Rundschau*. That this will not be the end of the discussion seems probable, especially as up to the present time the women have the best of the argument, to say nothing of their having had the last word. Meantime, the political press has taken the matter up, too, and so the whole problem of dealing with the social evil is being discussed from various points of view. The attempted solution of it here by the legal licensing of houses of prostitution, and the issuing of "books" (*i. e.*, licenses to ply their trade to prostitutes living apart, the books containing the record of their medical and police inspec-

tions) does not strike one as even a satisfactory makeshift under the circumstances. It makes the formal admission that prostitution is a necessary evil, and thus does away with the best safeguard of the young by the public announcement that continence is considered practically impossible. The favorite argument of the advocates of the legal regulation of prostitution is that the evil has always existed and always will exist, and that as it is inevitably bound up with the conveyance of disease the law has a right to step in for its regulation. Casually, it might be said that there is no form of crime or evil that has not always existed, and that we have not reached the millennium by any means even in our enlightened end of the Nineteenth Century. We have not reached that stage of development, however, in our cult of humanity where we allow the man who has inevitable tendencies toward murder or robbery to put his tendencies into effect provided only he practises his failings on a certain class of the community.

It is often said that the question is not a moral but a medical one; that theology has naught to do with it, and that it is a matter of public hygiene. It is to be hoped that the question of right and wrong in the matter does not cease to have its place because the health of those who voluntarily expose themselves to contagion is threatened.

Under the system here, while the legal acknowledgment of the existence of prostitution, with the moral evils consequent on such a public acknowledgment, is made, the advantages gained are of the most illusory and problematic character. No medical examination, however thorough, can give absolute assurance of the absence of the germs of venereal disease, and only in frankly outspoken cases where the danger of the infection of others is but slight anyhow does it accomplish its purpose. Then the existence of licensed houses and licensed women only seems to leave the door wider open for the existence of what the French call "*prostitution libre*." Quite as much trouble must be taken to suppress this as if legalized prostitution did not exist, and police regulation seems to be as ineffectual in doing it as it does everywhere else. The fact that there is legalization deprives public sentiment of its greatest force. Making a regular legalized business of the matter effectually deters the ordinary young man from taking advantage of what a too-fond paternal government has established, supposedly for his benefit, but does not encourage him to any self-control in the premises, seeing that it is supposed that he is incapable of it. Only the most hardened *roués*, usually well on in middle life, and married men, form the customers at the government's shop. The matter is too broad for discussion even in a letter like this, but those who talk of the regulation of prostitution in the United States by any such measures as here employed should first study closely the practical application of the question as here demonstrated.

Not long ago one of the distinguished clinical professors was summoned to the house of the Austrian member of the famous banking family of Rothschild. He was accompanied by a younger member of the profession who while his chief was making the general clinical examination, proceeded to examine the baron's blood. The

banker was extremely interested in the procedure, and when the examination was concluded asked what he had found. The assistant replied that he had found everything perfectly normal and healthy; that there was the usual number of red blood-corpuscles, showing no marked differences in size or shape, and there was a very normal tendency to the formation of money rouleaux. The distinguished patient, who is well acquainted with the hereditary failing of his family in the matter of successfully forming money rouleaux, but who did not realize that this tendency was so outspoken that it could be discovered on microscopic examination of his blood, was very much amused. He was at first inclined to consider the expression as not quite serious and as meant to stave off questions on the part of an inquisitive patient. When assured, however, that the description was eminently scientific his admiration for the "new medicine" was correspondingly increased. "What is bred in the bone, will out in the blood," I suppose received a striking exemplification for him. When the visit was over and the doctors were leaving the fee the younger man found in the envelope handed him by the baron's secretary was not smaller for his chance excursion all unwitting into the atavistic peculiarities of the Rothschild family in his perfectly commonplace description of the results of a blood examination.

Koch's new tubercular serum has now been in use here for some time, and the results obtained from it seem to be no better than with the original tuberculin. There seems to be no special danger in its use in its present modified form, though it has been noted that patients who, under the ordinary treatment for consumption (plenteous feeding with abundance of light and air), had been gaining in weight sometimes lost in weight after the beginning of the injections. The curative properties of the new remedy, moreover, are very problematic. No one seems as yet to have noticed a frank decrease or disappearance of tubercular patches in the lungs which could be demonstrated by the ordinary physical signs. On the contrary, it has been noted that while patients from systemic accommodation to the remedy could take comparatively large doses of the tuberculin without the occurrence of febrile reaction yet the disease itself could be demonstrated by positive physical signs to be advancing.

Some abscesses have been noted, too, at the points of injection, and the bacteriologic examination of certain samples has shown that it was not always sterile but contaminated at times with staphylococci, sometimes even with streptococci. This seems to be the result of carelessness in filling the receptacles. It is all the more surprising as the preparation is an expensive one, and is put up by a firm to which the work was especially entrusted by its inventor for the express purpose of avoiding such inconveniences. One prominent clinician insists that samples should always be thoroughly examined by culture methods before use.

As in most large cities, Vienna has a never-failing source of amusement for her holiday crowds in the collection of monkeys in her zoologic garden at Schönbrunn. At present there is a gambling crowd of them seemingly in perfect health, but it has not always been so,

and the story of the vicissitudes of the ape colony at Schönbrunn is an interesting chapter in the contagiousness of tuberculosis and the danger of infection from association with the tuberculous. Some years ago so many of the animals became tuberculous and died that their quarters were completely destroyed, everything wooden about them being burned and every possible precaution taken that the new quarters should be absolutely clean. Almost an entirely new collection of apes was purchased, and it was hoped that the trouble was over. Soon the deaths from tuberculosis began once more. Each of the dead animals was kept only long enough to allow of demonstration *post-mortem* that the cause of death was really tubercle, and then the carcass was burned. Notwithstanding this precaution, and frequent careful disinfection, the disease waxed fiercer, and in the course of some months seventy-five of the animals perished from it. The collection was practically annihilated. Careful observation showed that some of the animals had brought the seeds of the disease with them. As apes do not die frequently from tuberculosis in their wild state, it was concluded that the animals became infected while in the hands of the dealers. They are kept by these people huddled together in extremely limited, unclean, badly ventilated and overcrowded quarters while waiting a purchaser. One affected animal would easily infect others, especially on account of the extremely lowered resistant vitality of their utterly unsanitary captivity. The next batch of apes was obtained direct from the Austrian consul in India, and was shipped direct to the zoologic garden. Since then all the specimens from abroad have been obtained in this way and the animals suffer no more from the disease. The system has been in vogue now for about two years and is eminently satisfactory to the management which was beginning to fear that it would be impossible to keep apes at Schönbrunn at all. The lesson learned by this experience is all the more striking as the ape is in general a rather cleanly animal, does not meddle with excretions of any kind and is especially particular about his food, refusing to touch it if it is dirty. In addition, the ape is not a carnivorous animal, so that a number of sources of infection are shut out. The milk which was supplied to them at Schönbrunn was obtained from the cows belonging to the gardens.

A more absolute demonstration of the danger from the contagiousness of tuberculosis could scarcely be had. Intimate association with those affected by the disease, when for the moment the healthy are in poor hygienic condition, or their resistant vitality is lessened, evidently in many cases, is the cause of the disease.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE OBSTETRICAL SOCIETY OF PHILADELPHIA—BACTERIA AS A FACTOR IN THE PRODUCE TRADE—PHILADELPHIA'S REPRESENTATIVES AT THE MONTEAL MEETING OF THE BRITISH MEDICAL ASSOCIATION—VITAL STATISTICS FOR THE WEEK ENDING SEPTEMBER 4TH.

PHILADELPHIA, September 4, 1897.

THE first stated meeting since the summer vacation of

the Obstetrical Society of Philadelphia was held on September 1st, and was marked by the presentation of a remarkably able set of papers. The first communication read was one from Dr. Wilmer Krusen, on "The Treatment of Uterine Prolapse," in which a conservative plan of treatment for these cases was recommended, rather than a too-ready recourse to hysterectomy, without due regard to the indications for such a grave procedure. Dr. Krusen summarized the histories of fifteen patients upon whom he had operated, and detailed especially the post-operative course of treatment which he observed. For the operation of perineorrhaphy he considered Emmet's operation undoubtedly the best, and advised its literal application; for anterior colporrhaphy Stoltz's or Hegar's operation is most useful. The discussion which followed this paper was participated in by Drs. Richard C. Norris, John C. Da Costa, and E. E. Montgomery.

Dr. J. M. Fisher read a paper on "Cancer of the Uterus, and the General Practitioner." It was maintained that the general practitioner, because of his neglect of the recognized symptoms of this disease, due perhaps to carelessness in not examining patients with suspicious symptoms, perhaps to his interpretation of such phenomena as belong to the disorders of the climacteric period, oftentimes allowed the disease to progress to a stage at which operative measures are out of the question. Pain, said the speaker, is falsely considered as one of the early symptoms of cancer, whereas in reality it is usually not noticed until late in the disease. It was promulgated as a safe rule that all women presenting at all doubtful symptoms at the time of the menopause should be carefully examined for the existence of carcinoma uteri.

Dr. Richard C. Norris presented a series of "Clinical Notes," dealing with various gynecologic conditions, the chief of which were a case of bilateral broad ligament abscess, and a case treated by means of antistreptococcic serum. Dr. William E. Parke also presented several clinical reports of cases.

While it is true that bacteria have been utilized to some slight extent for the production of a good flavor in dairy products for some time past, it is but recently that the micro-organisms have been grown especially for this purpose, and have become a commercial article in the produce trade, and that thousands of dollars worth of this artificial "starter" in the making of butter and cheese has been sold yearly in all parts of the world.

The headquarters for the dissemination of these bacteria is in this city, where a company has been organized with a capital of \$100,000, and is doing a flourishing business, from all accounts, in this unique line of trade. Already many large dairy companies in all parts of this country, in Canada, in the British Isles, and even as far away as Australia may be found among the patrons of this highly enterprising corporation, and the shipment of culture tubes of the desired germs is reported to be a matter of large interest to the produce trade.

It is claimed that these bacteria produce a uniform flavor in butter, so that the popular "June" flavor may be secured at any time of the year, and that by the same agency the flavor of cheese is regulated to suit the fancy.

of the consumer. It will be interesting to observe how the public and the health authorities take this innovation, which seems to have assumed proportions worthy of attention; for the practice is one which is capable of extensive abuse in the hands of unscrupulous tradesmen, who may care more for the dollar which the "butter culture-tube" brings than for the purity of its contents; so still another commodity is presented for the criticism and examination of the State factory inspectors, who already, in their insufficient numbers, have all they can attend to in other fields.

Philadelphia medical men are well represented at the meeting of the British Medical Association which is about to come to a close at Montreal. A large number of the physicians of this city are in attendance at this convention by invitation, among whom may be mentioned Drs. James C. Wilson, John Ashhurst, Jr., George M. Gould, James Tyson, John H. Musser, M. Howard Fussell, and W. A. N. Dorland.

The deaths in this city during last week numbered 399, an increase of 12 over the preceding week, and of 37 over the corresponding period of last year. Of the total number of deaths, 150 occurred in children under five years of age. The number of infectious diseases did not differ materially from that reported last week.

TRANSACTIONS OF FOREIGN SOCIETIES.

Berlin.

THE ADVANTAGES OF PUNCTURE AND CONTINUOUS DRAINAGE IN DISEASES ATTENDED BY EDEMA—THE CLINICAL DIAGNOSIS OF SCROFULA—ENDOCARDITIS TRAUMATICA—CANCER OF THE ALIMENTARY TRACT, ESPECIALLY WITH REFERENCE TO ITS TRAUMATIC ORIGIN.

BEFORE the Medical Society, May 26th, Ewald spoke of the advantages to be derived from puncture and continuous drainage, *in diseases accompanied by edema*, such as cirrhosis of the liver, nephritis, heart failure, etc. The following case was presented as illustrative of the subject: A man developed an acute attack of nephritis and was admitted to the hospital August 31, 1896, with uremic symptoms and marked edema. Delirium rapidly followed. The urine contained two per cent. of albumin, hyalin casts, and red and white cells, but no pus. The abdomen was tapped and the ascitic fluid removed. In addition, one and sometimes two trocars were kept in each leg. From September 10th to December 3rd forty-five pints of fluid was obtained from the legs in this way. The pleural cavity was tapped five times, and forty ounces of fluid obtained. From October 6, 1896, to March 13, 1897, the ascitic fluid was drawn off forty-five times and measured 291 pints, a quantity weighing considerably more than the patient himself. During this treatment the amount of albumin in the urine varied, but, on the whole, constantly grew less.

The final results of the treatment were satisfactory. Not one of all these punctures was followed by necrosis, gangrene, or erysipelas. Only once there was a slight dermatitis, which occurred without known cause, and rapidly subsided under the use of compresses saturated

with alcohol. The patient, when presented, still had some edema, but all trace of ascites was gone, and he was in fairly good health. There was a little hypertrophy of the heart. At one time, for a short period, the type of the ascites changed from serous to chylous.

Ewald had seen good effects follow this continuous drainage in numerous other cases, and he warmly advocated the practice of allowing the escape of accumulated fluid as soon as possible. The advantages of this removal are so apparent as scarcely to need mention; the pressure upon the vessels of the abdomen, upon the intestines, and upon the liver is at once relieved; and still more important, perhaps, is the relief of pressure upon the heart and lungs. As a natural result, all these organs can better perform their functions, and Ewald was of the opinion that he had saved several patients from death by a timely and thorough tapping and drainage. Of course, no one must make the mistake of supposing that a cure is affected by this treatment. The disease which caused the edema, in this patient remains, but, although he has the nephritis to contend with, he is in a totally different condition to meet it than he would have been without this relief.

Klemperer urged against this treatment the fact that collapse or even fatal hemorrhage may follow it. It is not difficult to understand that the sudden and too great relief of pressure on the abdominal vessels is followed by their great distension, and by a corresponding withdrawal of blood from the brain.

Senator admitted the possibility of hemorrhage from the portal vessels, though he had never seen such an occurrence. To avoid this, all of the ascitic fluid should not be withdrawn at one time, and further, the patient should lie down during the process of tapping.

In closing the discussion, Ewald said that it would indeed be foolhardy to withdraw six or eight liters (quarts) of ascitic fluid during ten minutes; that one ought to use a small trocar so that the fluid passes away very gradually. He himself uses a needle not much more than twice the thickness of a knitting-needle. When the tapping is performed in this manner, the vascular system has time to accommodate itself to the condition of altered pressure, and the extra time thus lost to the physician is time well spent. He had never seen bad results, due either to cerebral congestion or to abdominal congestion or hemorrhage, follow, and he said it was not clear to him that the relief of pressure could result in the rupture of a blood-vessel, as by that very relief of pressure the over-action of the heart would be reduced.

At the session of June 16th, Neumann spoke of the *clinical diagnosis of scrofula*, which he defined as identical with tuberculosis, a "scrofulous diathesis" being simply a tuberculous one, and a "disposition to scrofula" merely a disposition to tuberculosis. The commonest development is in the glands of the neck. It has been suggested that the infection here is from the throat, but this has not yet been proved. Certain it is that tuberculosis of the tonsils in children, when the lung is already affected, can only rarely be demonstrated, and primary tonsillar tuberculosis is not of any more frequent

occurrence. The bronchial glands are often affected. This causes a bronchial breathing over the second, third, and fourth costosternal articulations. If the mediastinal glands are affected there may be cough similar to that of whooping-cough.

From the ninth to the fourteenth year, in addition to the swelling of the glands, scrofula produces chronic inflammatory changes in the ears and nose, and also in the gums and teeth; from the third to the eighth year eczema of the face, and conjunctivitis are also common. In contradistinction to these symptoms, during the first four years of life the manifestations of scrofula are almost exclusively those in which the presence of the tubercle bacillus can be found; scrofuloderma, tuberculosis of the bones and joints, meningitis, and tuberculosis of the lungs and abdominal organs. In thirty-six per cent. of the cases of scrofula the parents of the child have symptoms of tuberculosis.

At the session of the Union for Internal Medicine, held May 31st, Litten read a paper on *endocarditis traumatica*. He excluded from consideration under this title all instances of tearing or bruising of the valves in cases in which endocarditis is already present, as this may occur, even resulting in death, without there being any trauma. Neither does the term include those cases in which an accident causes a fully compensating heart in which a lesion is present to become uncompensating, nor those instances, of which many have been recorded, in which, after an injury, germs enter the blood, and fasten themselves upon a valve. These are cases of septic endocarditis resulting from general infection. There are left cases of simple, benign verrucose endocarditis, which have followed so directly upon the receipt of an injury that they undoubtedly are to be regarded as its direct result. Such a case is the following: A healthy young man was crushed by a horse against the side of a stall. As a result he developed pain, anxiety, palpitation, chilliness, fever, dyspnea, and cyanosis. Some months later signs of mitral insufficiency and endoarteritis developed, which ordinarily lead to aortic stenosis. In only one case of this kind had Litten seen the traumatic endocarditis result in recovery; all the others became chronic.

In the discussion of this paper, on June 21st, Führbringer stated, (1) That all affections of the heart may be rendered much worse as a result of trauma; (2) that even in healthy persons a temporary severe disturbance of function may result (acute dilatation); (3) that injury of the cardiac muscle may be followed by myocarditis; and (4) that valvular incompetence may follow tearing of a valve.

The writer thought it had not been proved that true inflammatory endocarditis could follow traumatism. Stenosis of a valvular orifice might of course result from the cicatrix due to a rent, but this is quite different from stenosis resulting from specific inflammation.

Von Leyden mentioned the case of a boy twelve years of age, who was thrown down and struck upon his breast by a school-teacher. A fever developed and six weeks later the boy died. Suppurative peri- and endocarditis, with calcification were found, the valves being involved.

In such a case it is difficult not to recognize the relation of cause and effect between the accident and the disease.

Litten said that the occurrence of typical endocarditis with papillary excrescences in these cases had been so thoroughly proved by autopsies that its existence can hardly be doubted. The traumatic breaks in the endocardium presumably furnish the means of entrance for the germs which are circulating in the blood, and in them and in the extravasations the germs find a suitable soil for growth.

Boas reviewed from an etiologic point of view *sixty-two cases of cancer of the alimentary tract*, which he had seen. In only three instances was there a history of cancer in the parents of a patient, and only seven times in the person of some other near relative. Heredity, then, possesses but little significance as a point of diagnosis. Quite the reverse is true of trauma. From the records of his polyclinic his assistant had been able to collect thirty-four cases of carcinoma of the alimentary tract possessing a traumatic history. In six of these the cancer was of the stomach. From four years to two months elapsed before the patients complained of symptoms. This fact raises the question as to the length of time which a cancer may exist before symptoms manifest themselves. Boas said that he agreed with those authors who associate a slow growth with a longer latent period. Traumatism under such circumstances may stimulate the sluggish cells of a slow-growing tumor to greater activity. The younger the individual, the more certain the relation between trauma and tumor.

SOCIETY PROCEEDINGS.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-fifth Annual Meeting, Held at Montreal, August 31 to September 3, 1897.

[Special Report to THE MEDICAL NEWS.]

GENERAL SESSION.

THIRD DAY—SEPTEMBER 2D.

THIS session was devoted to the Address in Surgery by MR. W. MITCHELL BANKS of Liverpool. His subject, "The Surgeon of Old in War," proved one of the most interesting of the entire meeting, both from a historic and heroic standpoint. At its conclusion, Sir William Huntington moved a vote of thanks to Mr. Banks for the pleasure his address had given them, which was seconded by Dr. W. W. Keen of Philadelphia, and carried by acclamation.

The other events of the day were the luncheon upon the "Mountain" in a beautiful open pavilion commanding a superb view of the entire city and the majestic St. Lawrence for nearly thirty miles. This was given to about 250 of the English members and noted guests by the Mayor of Montreal, and was followed by brief speeches by Lord Lister, Lord Mount Royal, Mr. Wheelhouse, Dr. La Marche, and others.

In the later afternoon, the foundation-stone of the Nurses' Home of the Montreal General Hospital was laid by Lord Lister. Short speeches were made by Lords

Aberdeen and Mount Royal, and by the Mayor and Dr. Roddick.

At night was held the most impressive and ponderous social event of the whole meeting—the Annual Dinner. The huge dining-hall was beautifully draped with flags and the crests of the different provinces of the British Empire, and tables were laid for 600 guests. The good old, time-honored toasts of “The Queen,” “The Houses of Parliament,” “The Army and Navy,” were responded to by a long (and appalling) array of speakers, chief among whom were Lords Aberdeen, Lister, and Mount Royal, Professor Michael Foster, Dr. W. W. Keen, Sir Walter Foster, Sir Wm. Van Horn, the Mayor of Montreal, the Mayor of Toronto, etc. The event of the evening was one not down on the program, the presentation of an address to Lord Lister by Dalhousie University, Halifax, N. S. This address, coming literally from the very ends of the earth, and the extraordinary outburst of enthusiasm which it evoked, the whole company, grave and reverend seigneurs as most of them were, leaping to their feet and waving their napkins in the air and cheering “three times three” again and again, completely overcame the grand old man. He wept like a child, and it was some minutes before he could control his voice sufficiently to express his thanks for both honors, which he did in a few simple but exquisitely chosen words.

During the afternoon, an international golf match and tea were given by the Royal Montreal Golf Club, on their beautiful grounds near Lake St. Louis, which were courteously placed at the disposal of members and guests of the Association during their entire stay.

FOURTH DAY—SEPTEMBER 3D.

The paper of the afternoon was the Address in Public Medicine by DR. HERMAN M. BIGGS of New York. (See page 321.) It was heard with great interest, and at its conclusion a vote of thanks to the distinguished author was moved by Dr. Montizambert of Montreal and seconded by Dr. Harvey Littlejohn of Edinburgh.

The President of the Council, Dr. SAUNDBY, then moved that “this meeting recommends his Excellency, the Earl of Aberdeen, K.C.G., C.M.G., and Lord Strathcona and Mount Royal for election as honorary members of the British Medical Association.” This was seconded by the Treasurer, Dr. Parsons, and carried unanimously. The President, Dr. Roddick, moved the endorsement by the Association of the extension of a system of District Nursing throughout the Provinces of the Dominion, which was seconded by Dr. Barnes and carried.

An invitation was presented on behalf of the American Public Health Association by the Chairman, Dr. Benjamin Lee of Philadelphia, to attend its Twenty-fifth anniversary in Philadelphia October 26th, which was received with thanks, and ordered published in the journal of the Association.

The meeting then adjourned with the usual vote of thanks to the President.

The other events of the day were garden-parties, a second excursion down the Lachine Rapids, and a game

of lacrosse between the St. Regis Indians and the Montreal Club in the afternoon.

In the evening a reception was given in the beautifully lighted grounds and buildings of the McGill University by the Faculty, the chief feature of which was the unrolling of a mummy (presented to the museum by Dr. Roddick) by Professor Macalister of Cambridge, who interpreted the inscriptions upon the bandages as they were unwound, in an appallingly edifying manner.

SECTION IN GENERAL MEDICINE.

SECOND DAY—SEPTEMBER 2D.

THE DIETETIC TREATMENT OF DIABETES

was the subject for discussion and was opened by DR. ROBERT SAUNDBY of Birmingham, England. The usual diabetic diet, he said, with its rigid restrictions, can only be carried out by the doctor's authority and the patient's docility. Compromise is the rule, but it is arrived at by the doctor's opinion being sacrificed to the exigencies of the patient. Diabetes mellitus is a clinical group, of which the cases and proper classification are debatable, and on that account variations prevail on views of treatment.

Glycosuria is an abnormal phenomenon, and occurs when the amount of carbohydrates ingested exceeds the utilizing capacity of the body. This capacity varies in different individuals and perhaps in the same person at different times. Those who become easily glycosuric from slight excess stand in close relationship to the milder form of diabetes. In severe cases of diabetes, glycosuria persists even on flesh diet, a fact explained by the formation of carbohydrate molecules when albumen is converted into urea. Hence, in severe diabetes, there is no physiologic reason for persisting with strict diet in the hope of thereby removing the glycosuria.

We must look to clinical results in the hope of justifying our treatment and must not be led too far by our prepossessions in favor of any disputed pathologic doctrine. Instead of following blind routine, we should give each patient as great a quantity of carbohydrates as experience shows can be assimilated. The following daily allowance will be suitable in an average case: Milk, 1½ pints; baked potatoes, 6 ounces; levulose, 1½ ounces, and in mild cases, 4½ ounces of dry toast. Fat bacon may be allowed at one meal, if tolerated, but diabetics absorb fat badly. Alcohol, in the absence of albuminuria, may be allowed in quantities up to 4 ounces, especially if taken with dilute mineral acids. It is of great importance to prescribe definite quantities, and to test the effect of the diet by weekly body weighing, measurement of the urine, and estimation of the sugar, the first of these being the most important.

DR. SIDNEY COUPLAND of London, England, concurred in the view that no hard and fast lines can be drawn in the employment of a restricted diet; indeed, he has often found that the attempt to enforce the use of an exclusive nitrogenous diet has resulted disastrously to the patient, diabetic coma frequently supervening, especially in cases in which there is a tendency to mental deterioration.

DR. R. SHINGLETON SMITH of Bristol, England, thought that while dietetic latitude might be allowed aged

diabetic patients, in the case of the young a more or less rigid exclusion of carbohydrates must be insisted upon.

DR. EBENEZER DUNCAN of Glasgow pointed out that the percentage of sugar in the urine is not the sole criterion of the progress of the disease, nor the elimination of sugar from the urine the only consideration. Cases due to disease of the pancreas are not affected by dietetic treatment, while those of a neurotic type are positively benefited by a restricted and non-saccharine diet.

DR. JAMES TYSON of Philadelphia said that in mild cases the glycosuria is controlled and even cured by dietetic treatment. Glycosuria to the extent of two per cent. must be treated by restricted diet or it will invariably run into diabetes mellitus. For two days during each month, he is in the habit of testing the effect of an exclusively proteid diet in his milder cases, and alternating this test, he has experimented with the effect of carbohydrates, also once a month. The polyuria in diabetes he believes to be the result of the glycosuria. A purely proteid diet increases diacetic acid in the urine, and the possible accumulation of this toxin in the blood must not be lost sight of in pursuing a rigid proteid form of diet.

DR. A. JACOB of New York said that the age of the patient is an all-important factor in the treatment of the disease. Carbohydrates should, as far as possible, be withheld from children, whereas the old may be allowed more latitude of diet, and if emaciating, must of necessity be allowed carbohydrates. He strongly advocated the use of milk, not as an exclusive diet, but as a most beneficial article of diet in diabetics of every age and type. He has not found any benefit to result from the use of skimmed over other forms of milk.

DR. LINDSAY of Belfast, Ireland, has found all treatment futile to save life in case of the young. Life may be prolonged for a few years and the disease palliated but not cured.

DR. SAUNDBY, in closing the discussion, wished it understood that he did not advise latitude in the dietetic treatment of disease only in so far as such latitude is guided by the results of experiment. Individual and not routine treatment should be employed in every case.

DR. EBENEZER DUNCAN of Glasgow then read a paper, entitled

THE TREATMENT OF DIABETES BY URANIUM NITRATE.

He said that Dr. West's paper, read before the Association in 1895, had revived interest in this form of treatment. Dr. Duncan believes that the cause of partial failure in the use of this remedy in diabetes is due largely to the insufficiency of the doses commonly administered. To obtain the best results 12 to 15 grains of the drug must be taken three times a day, preferably after meals. The possibility of exciting gastritis and nephritis, however, must be guarded against. He has found 15-grain doses quite safe. Since April last he has been testing the remedy carefully at the Glasgow Royal Infirmary, and in only one out of six cases—an advanced and hopeless one—had he found it disappointing. These six cases included persons varying in age from early manhood to old age. He has found also that the withdrawal of the drug at too

early a stage has been immediately followed by a return of all the diabetic conditions. With the one exception noted, all the patients under treatment are at the present time free from the presence of any sugar whatever in the urine, and a corresponding improvement in the general health has followed. He believes the cause of the diminution and elimination of sugar from the urine by means of this agent is due to its stimulating effect on the sugar-consuming cells, and not, as West claimed, dependent upon its power of consuming and digesting large quantities of starch.

DR. TYSON said that he had tried the treatment of diabetes with uranium nitrate twenty years ago, but abandoned it. After reading Dr. West's paper recommending larger doses, he resumed its use, and although he did not reach the large doses of from 8 to 10 grains, he could not obtain results from its use that warranted him in continuing it. One untoward effect which he had met with was a persistent diarrhea.

DR. DUNCAN, in replying stated that it will be found upon careful observation that the diarrhea complained of was due not to the uranium salt, but to over-feeding. He did not claim the drug to be a specific, but in his hands it was certainly at present proving a most promising remedial agent in diabetes.

DR. J. E. GRAHAM of Toronto read a paper on, and presented a case of

CROSSED HEMIPLEGIA, THE RESULT OF INJURY TO THE PONS VAROLII.

The accident occurred when the boy was eighteen months of age, and consisted of a penetrating wound of the left side of the soft palate from a splinter. The injury was followed by traumatic convulsions. He is now fifteen years of age, and is still subject to convulsions at varying intervals. There is hemiplegia of the side opposite to the injury, the paralysis being less marked in the lower than in the upper extremity. The face is drawn to the left side. The patellar reflex is exaggerated. Convulsions are general. Intelligence fair, but slightly impaired. Speech is drawling, swallowing of solids difficult. There is general atrophy of all the muscles of the right side, and ankylosis of the right elbow and wrist.

DR. ANGELL of Rochester, N. Y., cited a case of tumor of the pons varolii in which there was no diminution of the reaction of degeneration, indicating that the lesion was about rather than within the pons. He advocated operative treatment in Dr. Graham's case for the relief of the fixed flexion of the elbow and wrist.

THE BACTERIOLOGY OF PERTUSSIS

was the subject of a paper by DR. HENRY KOPLIK of New York. He employed hydrocele fluid as a culture medium in his experiments on account of the impossibility of generating the disease in animals. The small white pellets of mucus coughed up during the early stage of pertussis, he found to contain in their meshes an organism capable of isolation, and in his opinion this is the specific germ of the disease. He succeeded in obtaining excellent cultures in thirteen out of sixteen cases in which the experiment was carried out. The organism is very

similar in appearance to the bacillus of diphtheria, although but half its length. He has not yet completed his investigations of this subject.

DR. J. H. MUSSER of Philadelphia then read a paper, entitled

DISAPPEARANCE OF (PRESUMABLY ORGANIC) CARDIAC MURMURS

in the course of which he stated that mitral regurgitation disappears more rarely than any other murmur. Many so-called organic murmurs are undoubtedly choreaic and functional in character, and hence their disappearance can readily be accounted for. Many organic murmurs vanish on account of ensuing cardiac dilatation. Such dilatation has been found *post-mortem* to so effect the auriculo-ventricular orifice as to render the ventricular cavity continuous with the cavity of the auricle. Some cardiac sounds disappear or are modified in consequence of increasing calcareous deposits upon the margin of the valves. The subject, he said, requires further study and investigation.

DR. JAMES T. WHITTAKER of Cincinnati read a strong plea in justification of the continued use of

TUBERCULIN (KOCH'S) IN THE TREATMENT OF PHTHISIS.

He has used it in the Cincinnati Hospital during six years in more than 1000 cases, and has yet to experience one serious result from its employment. If on no other ground than for the diagnostic value of the reaction which it invariably gives in phthisis its use is warranted. He cited a supposed case of carcinoma under the left sternocleidomastoid muscle which was operated upon, and a *post-mortem* examination revealed that the growth was tubercle. He had obtained, in the majority of cases, beneficial and even curative results from its use. As soon as tolerance of the serum begins to manifest itself, it should be withheld, and resumed when that tolerance is lost. It requires years in some cases to obtain its full remedial results. He had recently discharged a patient as cured who had been under the tuberculin treatment for two years.

DR. TYSON said that he has experienced great difficulty in persuading patients to submit to the long-continued daily hypodermic injections.

DR. GRAHAM cited a case in which Dr. Trudeau obtained the reaction and confirmed the diagnosis of phthisis when all the usual symptoms were absent.

SECTION IN SURGERY.

SECOND DAY—SEPTEMBER 2D.

DR. JAMES BELL of Montreal read a paper upon
THE OPERATIVE TREATMENT OF CANCER OF THE RECTUM.

This is a subject of great promise, but it finds scant mention as yet in surgical text-books. Nevertheless, the removal of any portion of the rectum is now a feasible surgical operation by the sacral route. An early, thorough removal of cancer of the rectum enables one to give as favorable a prognosis as a similar operation in the breast. Glands in the mesocolon are often palpable when no can-

cer of the rectum exists, so the presence of these glands is not necessarily a contra-indication to operation.

In a large majority of cases of high cancer of the rectum, the symptoms are slight or wholly absent, and early diagnosis is therefore difficult. Electric lighting and inspection of the rectum offers the surest means of diagnosis.

Cancer of the rectum has been removed by the abdominal route, and the two cut ends of the bowel approximated with success; but this is possible in very few cases, and the same is true of the vaginal method. The majority of these tumors should be attacked, therefore, by the sacral method. Omitting the technic of the operation, although the reader said he preferred Heinecke's incision, some practical points were discussed.

1. Previous colostomy is desirable, both to complete the diagnosis, to keep feces for some days away from the rectal wound, and to make a permanent outlet for feces if at operation it should be found necessary to leave an open wound.

2. There are three essentials necessary to the operation itself—absolute cleanliness of the wound, freedom from tension of the cut edges of the bowel, and a perfect suture. The fear of stripping off too much of the mesocolon is an exaggerated one; there is little danger of sloughing if tension is avoided.

3. There should be no hurry in closing the colostomy-wound, as it is better to wait some weeks or months even, until the danger of recurrence has somewhat passed.

Statistics are unreliable as showing the exact percentage of cures, but it is safe to predict that further experience in technic, and especially an earlier diagnosis and operation, will give a higher percentage of recoveries than has yet been obtained.

MR. C. B. BALL of Dublin then read a paper, entitled

TRANS-SACRAL RESECTION OF THE RECTUM.

He opposed the idea that sepsis in these cases in many instances is unavoidable. The perineal route should be abandoned for all cases except those rare ones involving the anus alone. Even if successful, the perineal operation leaves the patient in a miserable state of incontinence. The motility of the tumor in the pelvis is the best indication that the growth may be removed with a fair chance of non-recurrence. Even if recurrence is to be looked for, the removal of the growth admits of a more favorable prognosis, both as to the comfort and length of life, than permanent colostomy.

The maintenance of the pelvic diaphragm (levator and sphincter ani muscles) is most important, and can only be preserved by the sacral operation, with injury to the muscles only in the center of the diaphragm, thus avoiding the nerves which supply these muscles. With a pruning-shears, after the sacrum has been exposed, a cut is made to the right and left of the coccyx and lower part of the sacrum, and then one cut is made across it, a triangular portion being removed. This is more simple and far better than the osteoplastic operations. If the preliminary preparation of the patient has been good and the wound sufficiently flushed, drainage may be dispensed with. Sloughing can usually be avoided by taking the greatest

care in handling the gut, and by snipping lateral attachments as far away from the gut as possible. The essayist's record is 17 cases, with 1 death from operation, a case in which the bowel was completely occluded and could not be thoroughly cleansed. Preliminary colostomy is wholly unnecessary.

DR. W. W. KEEN of Philadelphia called attention to the fact that now no part of the alimentary canal is out of the reach of the surgeon, excepting a portion of the esophagus. The mortality of Kraske's operation (in 115 cases, in his own hands) was 34.5 per cent.: during the last few years it has been less than 9.8 per cent. As to recurrence, taking a limit of four years as a safe guarantee, 15.7 per cent. of his patients have passed this limit, while many of the others have a much lengthened and benefited existence. Other surgeons have had as high as 20 per cent. of permanent recoveries. He believes in a preliminary colostomy, performed one, two or, better, three weeks before the resection of the bowel. Kraske advocates this only in the case of patients with obstruction, but it has an object not only to unload the bowel, but to avoid sepsis, especially in those cases in which it is found impossible to unite the cut ends of the bowel. Moreover, an inguinal colostomy wound is vastly preferable to a sacral anus, without sphincteric action.

The speaker said that a preliminary emptying of the bowel during four or five days is insufficient. He had known of mild purgatives and injections being given during a period of seventeen days without producing complete evacuation of the colon. The presence of indican in the urine will show whether fecal matter is still in the bowel.

The object of osteoplastic resection is to restore the integrity of the bone. This is to be accomplished only by the most perfect asepsis, for there is a surgically produced compound fracture of the sacrum. In women, child-bearing is not interfered with, and men can ride bicycles after the removal of the sacrum, and the speaker therefore advocated the removal of a portion of this bone instead of the osteoplastic operation.

DR. JOHN ASHHURST of Philadelphia said that he had not been so enthusiastic over the operative treatment of this serious malady as the previous speaker, but what he has recently seen in Montreal hospitals, as well as heard during the proceedings of the section, have given him a more favorable view. He too, inclines toward preliminary colostomy. By posterior linear rectotomy, as recommended by some French surgeons, great relief can be afforded. This is naturally a mere palliative, but it is a simple procedure in non-operative cases.

DR. BALL, in reply, said that as he brings down and fixes outside the anus the upper cut end of the bowel, the necessity for colostomy is practically done away with. In resection of the bowel and suture of the cut ends, a preliminary colostomy is desirable.

MR. BERNARD ROTH of London presented an analysis of

ONE THOUSAND CONSECUTIVE CASES OF LATERAL CURVATURE OF THE SPINE TREATED BY POSTURE AND EXERCISE EXCLUSIVELY, WITHOUT MECHANICAL SUPPORT.

Almost exactly one-half of these patients suffered from muscular weakness. More than one-half of these (523) had simple curvature—the letter “C” deformity. If osseous deformity coexists, a perfect cure is impossible. In “C” curvature osseous deformity is an exception, while in “S” deformity it exists in most of the cases. Pain is a most common symptom. Flatfoot of a severe type is found in about one-sixth of the cases, and of a moderate degree in nearly one-third, making almost one-half of all the cases in which to treatment of the spine that of flatfoot is to be added.

Nearly every patient had received some previous treatment, either by massage, gymnastics, or spinal apparatus. All apparatus was at once abandoned. The usual duration of treatment was, by daily visits, for from two to three months. The results were as follows: Cured or much improved, 869; improved, 75; failures or partial failures, 56.

A large percentage of the cured patients, more than one-third, were confirmed by observation from six months to ten years later.

MR. R. T. MCKENZIE described

A NEW SCOLIOMETER,

consisting of a stand with vertical upright and movable pairs of calipers which can be clamped upon the hips and shoulders. Then with an ordinary drawing-frame a tracing of the spine and iliac crests, acromion processes, etc., is made, the tracing upon paper being one-fourth natural size. The patient is then made to bend forward, and tracings of the curve of the ribs are similarly made at various levels.

DR. V. P. GIBNEY of New York believes in, and carries out as far as possible in his practice, Roth's methods of treatment of lateral curvature, and therefore during the past ten years has obtained much better results than formerly. If all cases were thus treated before osseous deformity is established, permanent cures might always be obtained. It is difficult to persuade patients to come daily for three months for gymnastic exercises. In America there is far less pain in connection with lateral curvature than in England, although why this should be the case does not appear. A certain number of stupid patients do better if they wear for a time an appliance until they obtain some little practice in gymnastics and the spine becomes less rigid.

DR. SAMUEL KETCH of New York said that he anticipates the time when parents and teachers and general practitioners also will pay attention to curves in children's spines, and will bring the children for treatment during the early stages. The instrument-maker should be a maker of an instrument merely, and should not be allowed to fit the instrument.

DR. B. LEE of Philadelphia considers that the lumbar region is affected before the dorsal region, and that treatment during this early stage is particularly successful.

DR. G. A. PETERS of Toronto spoke of

GUNSHOT WOUNDS OF THE SPINAL CORD,

giving an able array of statistics of injuries of this nature, for the most part received in the Civil War of the United

States. He then described a case of gunshot wound of the ninth dorsal vertebra, with sudden and complete paralysis and anesthesia below the eleventh dorsal nerve. The wound healed without suppuration. The deep reflexes were permanently lost, but the superficial reflexes in great measure returned. The patient died about four months later.

DR. J. N. COUSINS of Southsea, Wales, spoke upon
THE OPERATIVE TREATMENT OF STRICTURE OF THE URETHRA.

He has discarded cutting operations in almost all cases. The instrument he prefers is a catheter with a bulbous point, a solid, flexible distal portion, and a hollow, stiff proximal portion. These are made of various sizes, and in the course of three or four weeks the patient can accommodate the largest size. Many patients must be handled most carefully, but in only one case had the speaker found it necessary to suspend treatment entirely on account of chills and fever. If even a No. 5 instrument will not pass, the penis is distended with oil, and a small, absolutely flexible fine catheter (distal half a bougie) is passed. If it goes into a pocket it is left in, and a second and third, etc., is passed, until one enters the bladder. In very bad cases urethrectomy and perineal drainage is necessary.

SECTION IN OBSTETRICS AND GYNECOLOGY.

SECOND DAY—SEPTEMBER 2D.

DR. FRANKLIN H. MARTIN of Chicago contributed an address, entitled

A FURTHER REPORT ON THE TREATMENT OF FIBROIDS OF THE UTERUS BY VAGINAL LIGATURE OF THE BROAD LIGAMENT.

He stated that the operation was first proposed five years ago, its object being, first, to cut off the blood supply to the tumor, and, secondly, to alter the nerve supply of that organ. After describing the technic as practised by him at the present time, he enumerated the following points in favor of the operation: (1) From the standpoint of its mortality it is a minor operation. The patient can leave her bed at the end of a week; there is no shock attendant thereon; nor is there a protracted convalescence. If the method fails it can do no harm. (2) It does not destroy the family relation. Women can conceive after its performance. (3) It is applicable in desperate hemorrhagic cases in which a more radical operation cannot be performed at the time, and does not prevent resort to this if subsequently necessary. (4) It can be employed in cases in which such complications exist as to contraindicate a radical operation, as cardiac or other organic disease. (5) It may be employed in all cases in which the patient objects to the abdominal operation on account of the scar, or when she fears the shock of the greater operation. (6) It is of use in all cases in which the tumor is not of burdensome size and is associated with profuse bleeding. It is not applicable in pedunculated tumors of the submucous or subperitoneal variety.

DR. A. J. C. SKENE of Brooklyn remarked that hysterectomy for fibroid tumor is at the present time so successful

that few will consider any other method. In choosing the method of operation one should be guided by the age of the patient. He strongly objected to the removal of the sexual organs in young women. When the woman is near the menopause, however, he would prefer to perform hysterectomy. Statistics show that more women die after hysterectomy than from fibroids alone. In appropriate cases, his experience has agreed with that of Dr. Martin. He thinks the operation is impossible in the intraligamentous variety of tumor and very difficult in cases of multiple fibroids. The ligation of the artery is a difficult procedure. He emphasized the importance of a primary curettage of the uterine cavity. The diseased mucosa must be removed.

DR. MARTIN, in reply, stated that suppuration has never occurred in his experience after the operation, for the reason that he is careful in his technic.

The President of the Section, DR. WILLIAM JAPP SINCLAIR of Manchester, England, read an admirable address upon

INJURIES OF PARTURITION; THE OLD AND THE NEW,

in which he gave the history of the progress in obstetrics during the past two hundred years. He compared the methods of the Sixteenth Century, as practised by Chamberlain and Mauriceau, with the methods in vogue at the present time. Midwifery, he claimed, has become to-day too largely surgical, and the gynecology of to-day is largely required because of too frequent interference on the part of the obstetrician. Childbed morbidity is due mainly to the use of forceps. He quoted Collins' assertion that instruments should not be employed more than six times in 4000 cases. During the second period of the history of obstetrics, from the time of the introduction of anesthesia until the adoption of antiseptic methods, important advances were made. Emmet's operation and the work of Marion Sims in the cure of vesicovaginal fistulae belong here. The dangers of anesthesia are uterine inertia and the tendency to the too early use of forceps, with resultant perineal and vaginal laceration. The third period of anesthesia and antiseptic methods combined, began in 1870-73. The danger here is again due to too frequent and too early interference. The student of to-day learns surgery, which he never practises, and practises midwifery, which he never learns. During the last four years there has arisen a strong revulsion to the use of the forceps in Germany, and statistics show now that they are employed there only in about 1.03 per cent. of labor cases. In conclusion, he emphatically urged more careful instruction in obstetrics in the medical colleges.

The discussion on

THE VAGINAL *versus* THE ABDOMINAL ROUTE IN DEALING WITH INFLAMMATORY CONDITIONS AND TUMORS IN THE PELVIS

was introduced by DR. E. W. CUSHING of Boston. He stated that in making the selection of a route much depends upon the personal equation of the operator himself, and upon his medical training. He who sees every operation of this kind performed by the abdominal route will

adopt that method, while he whose experience lies entirely in the vaginal method will operate in that way. The mere item of the length of a man's finger may decide the point. It is difficult for a man to train himself in both methods, so that it becomes a matter of indifference as to which he adopts. In the vaginal operation, there are some advantages, such as the absence of cicatrices, so objectionable in the abdominal method, as well as the danger of hernia. There is also a difference in the amount of shock—there is much less in the vaginal operation on account of the less exposure and manipulation of the intestines. In truth, most of the shock of any operation is probably due to hemorrhage, and if this is prevented the amount of shock will not be noticeable. In vaginal hysterectomy, greater difficulty is experienced in avoiding the ureters, and the entire operation is more difficult than the abdominal procedure; it is easy to lose one's landmarks and to become confused. In the abdominal operation there is a greater certainty of diagnosis. It is much easier to work by sight and much easier to meet any complications that may arise. Weak or fat women are better operated on from below. The size and mobility of the uterus as well as the character of the discharges are general considerations to be studied. Abdominal hysterectomy is the rule for fibroid tumors in America. In France, morcellation is the rule because they are ignorant of our methods. Jacobs and Ségond, after visits to this country, are now performing the American operation. A small tumor, one not more than four or five inches in diameter, is most suitable for morcellation. In regard to malignant tumors of the uterus involving the fundus, the cervix should be sewed up and the enlarged uterus removed from above. Carcinoma of the cervix may be removed by the Clark operation, which is long and difficult, but the better method in the case of ordinary tumors is the operation from below. Inflammatory conditions of the pelvis can be removed by experts as well from below as from above.

DR. SKENE said that twenty years ago he suggested that pus in the ovaries and tubes might be readily reached through the vagina. The abdominal operation was the rule but now the best men are advocating the vagina as the most suitable route. In cases of smaller pus-sacs he opens from above rather than through the vagina. In case of small-sized uterine fibroids he prefers to leave the uterus alone or else adopt Martin's operation.

DR. JOHN CAMPBELL of Belfast said that the route ultimately adopted will depend largely upon the results of statistics, which as yet are to be compiled, and which present statements of the mortality and final results. The greater number of tumors are apparently removed by the abdominal route. In cases of limited inflammation, he prefers the abdominal route, but if the inflammatory condition is more diffused he operates through the vaginal vault, then, in case a large pus cavity is opened, it can be thoroughly drained, and in case of difficulty in entering the vaginal vault, a hysterectomy can be performed.

DR. H. T. HANKS of New York remarked that only star operators should attack certain inflammatory condi-

tions from below. The average gynecologic surgeon should not operate on a ruptured tubal pregnancy from below, nor should the vaginal operation be performed in cases in which there is a certainty of the presence of appendicitis.

DR. J. F. W. ROSS of Toronto stated that in Canada the patient does not trouble herself about the abdominal scar. As to hernia, it is not very common after the abdominal operation, and we are now beginning to hear of vaginal hernia, which is a much more serious condition than abdominal rupture. If it is proper to remove pus-tubes through the vagina it is just as proper to remove a fundal carcinoma that way. Want of space is a great defect in the vaginal route. Pus-tubes cannot be effectively removed from below, portions of the tube almost invariably being left. The removal of an organ not diseased in order to make a way of escape for pus is not admissible. In septic cases, with the patient very ill and when only a temporary opening is required, the vaginal opening is proper. It is impossible, as stated by Hentrotin, to say just where an abscess is located before the operation.

DR. A. LAPHORN SMITH of Montreal stated that he was an out-and-out advocate of the abdominal method. With the Trendelenburg posture, the abdominal surgeon is the master of the situation. The majority of women with pus-tubes are sterile, and in these cases the vagina is too narrow to permit of a suitable operation.

DR. BERRY HART of Edinburgh believed that one should not be a partisan of either route, but that one should decide which is the best operation in any given case. In the majority of cases, the abdominal route is the best, but in certain instances the vaginal incision gives excellent results.

DR. A. F. CURRIER of New York believes that the advantage *par excellence* of the vaginal route is the thorough drainage to be secured thereby. He has seen decided shock after the vaginal operation.

The President, DR. SINCLAIR, stated that he has operated on ruptured tubal pregnancy through the vagina with success. The operation is practically extraperitoneal on account of the presence of adhesions.

At 12.15 the section adjourned to the Royal Victoria Hospital to view a demonstration by DR. HOWARD KELLY of Baltimore of an examination of the female bladder and ureters.

SECTION IN ANATOMY AND PHYSIOLOGY.

FIRST DAY—SEPTEMBER 1ST.

THE BEST METHODS OF TEACHING ANATOMY

was the subject chosen for discussion, and this was opened at considerable length by PROFESSOR ALEXANDER MACALISTER of Cambridge, England. He was followed by DR. SHEPHERD of Montreal and several other Canadian and American speakers. The general feeling of the meeting seemed to be decidedly in favor of lightening the anatomic burdens of the over-driven student by cutting out matter which was only of theoretic interest. The only speaker who dissented from this view

was PROFESSOR MICHAEL FOSTER, who was of the opinion that a man might be taught too much physiology, but could never be overloaded with anatomy. As regards the methods of teaching, there was more divergence of opinion, and different views were expressed as to the value and scope of demonstrations, lectures, examinations, etc., as methods of teaching, all, however, being agreed as to the fundamental importance of practical work in the dissecting-room. The discussion was prolonged until twelve o'clock, when the reading of papers commenced. These were of purely anatomic interest and evoked little discussion. During the course of the meeting, lantern demonstrations were given by PROFESSOR PRIMROSE of Toronto on the method of teaching by means of frozen sections, and by PROFESSOR W. H. THOMPSON of Belfast on the degenerations resulting from lesions of the sensory cortex. A beautiful series of microscopic specimens illustrating the histology of the parathyroid gland, which were sent by DR. D. A. WALSH of Edinburgh, were laid out in an adjoining room.

ANNOUNCEMENT.

THE AMERICAN PEDIATRIC SOCIETY.

THE American Pediatric Society is making a Collective Investigation of Infantile Scurvy as occurring in North America, and earnestly requests the cooperation of physicians, through their sending of reports of cases, whether these have already been published or not. No case will be used in such a way as to interfere with its subsequent publication by the observer. Blanks containing questions to be filled out will be furnished on application to any one of the committee. A final printed report of the investigation will be sent to those furnishing cases.

[Signed.]

J. P. CROZER GRIFFITH, M.D., *Chairman*,
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457 Jefferson Ave., Detroit.

AUGUSTUS CAILLE, M.D.,
753 Madison Ave., New York City.

J. LOVETT MORSE, M.D.,
317 Marlboro Street, Boston.

Committee.

THERAPEUTIC HINTS.

Benzoate of Soda in the Treatment of Grippe.—No drug has given more favorable results in the treatment of *grippe* than benzoate of soda. It may be given in capsule or powder form, the usual dose being ten grains three or four times a day. When muscular symptoms are pronounced, the following combination acts admirably:

℞ Sodii benzoas	3 ii
Salol	3 i
Phenacetin	gr. xxxvi.

M., and ft. chart No. xii. Sig. One powder every four hours.

A Gargle for Sore Throat.—From 12 to 20 grains of ammonio-ferric-alum dissolved in eight ounces of water, and gargled at frequent intervals, will relieve ordinary cases of "sore throat" within a few hours.

Creasote Emulsion in Pulmonary Tuberculosis.—One of the best methods of administering creasote, especially in the case of children or those in whom the stomach is irritable, is in the form of an emulsion with cod liver oil, as follows:

℞ Creasoti (beech)	℥. xlviii—3 ii
Gum acaciæ	gr. xlviii
Glycerini	℥ ss
Ol. gaultheriæ	℥. x
Emuls. ol. morrhue, q. s. ad.	℥ vi.

M. Sig. Teaspoonful one hour after meals.

A Cough Mixture for Consumptives.—Although it seldom is justifiable to administer morphin in any form to allay the cough in pulmonary tuberculosis, during the last stage of the disease the following combination will be found to act admirably in procuring a cessation of the cough and inducing the sleep of which the patient so often is in need:

℞ Potassii cyanidi	gr. iv
Morphiæ sulph.	gr. iss
Spt. chloroformi } aa	℥ iss
Tr. hyoscyami	
Syr. acaciæ	℥ iv
Syr. simplicis, q. s. ad.	℥ viii.

M. Sig. Teaspoonful every three hours.

An Excellent Diuretic Pill in cases of dropsy of cardiac origin is the following:

℞ Scillæ, pulv.	
Digitalis, pulv.	
Caffeinæ citratis } aa	gr. xxx
Hydrarg. chlor. mitis	gr. v.

M. et. ft. pil. No. xxx. Sig. One pill thrice daily, after meals.

For the First Stage of Bronchitis.—

℞ Potassii citratis	℥ ss
Apomorphiæ hypochlor.	gr. i
Syr. ipecac.	℥ ss
Suc. limonis	℥ ii
Syr. simplicis, q. s. ad.	℥ iv.

M. Sig. Dessertspoonful in water every three hours.

For Acute Colic.—One of the best mixtures for the relief of that type of acute colic so frequently met with after indiscretion in diet, is prepared as follows:

℞ Chloroformi	℥ iss
Tr. opii deodorat.	℥ i
Camphoræ	gr. xv
Ol. cajaputi	℥ i
Aquæ, q. s. ad.	℥ ii.

M. Sig. Dessertspoonful every two or three hours.

For Atonic Dyspepsia.—An admirable tonic mixture for a patient recovering from atonic dyspepsia is the following:

℞ Strychniæ sulph.	gr. ss
Acid. nitromuriatici	℥ ss
Tr. gentianæ comp. } aa	℥ ii.
Tr. cardamomi comp.	

M. Sig. Dessertspoonful in water after meals.

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NO. 12.

ORIGINAL ARTICLES.

THE EXTRACTION OF NON-ABSORBABLE LIGATURES.

By JAMES S. CHENOWETH, M.D.,
OF LOUISVILLE, KY.

SINCE the days of Ambrose Paré, probably no one item connected with the technical details of a surgeon's work has given him more concern than has the subject of ligatures. Almost every conceivable suture-material has been tried, but the ideal ligature—strong, pliable, readily sterilized, tying smoothly and tightly, absorbable, but never too soon absorbed—has yet to be discovered. Almost the world over, the question has narrowed down to the use of silk, silkworm-gut and catgut, which most nearly approximate the ideal, but each of which is lacking in some essential particulars. When small vessels are to be dealt with in clean tissues, and little tissue is to be included in the ligature, properly prepared gut of small size leaves nothing to be desired, but under the reverse conditions few surgeons are willing to trust to it. The large strands of gut are difficult to sterilize, difficult to tie, and still more difficult to securely knot for a sufficient length of time to insure occlusion of the blood-vessels. Silk, on the other hand, is easily sterilized without loss of strength, is pliable, and ties smoothly and firmly, but it is non-absorbable. The latter fact is a very serious drawback to the use of the silk or silkworm-gut ligature under conditions which for other reasons make it almost a matter of necessity.

Even if sterile, a large non-absorbable ligature strangulating a considerable mass of tissue not infrequently fails to become encysted and acts as a foreign body; while, if the ligature or included tissue contains infectious material, the almost inevitable result is a discharging sinus, persisting until the ligature cuts through its pedicle and is extruded. To hasten the discharge of this ligature, two plans have been in common use: (1) the ends of the ligature have been left long, hanging from the angle of the wound, traction being made upon them in one of several ways; (2) the ends have been cut short and, failing to become encysted, the ligature has been "fished" out with some convenient instrument. Both of these methods are uncertain in their results and carry positive danger of injury to the vessels of the pedicle, or

to other structures which may have become adherent thereto.

My attention was especially called to this subject eighteen months ago when I had under my care a young man with a disorganized kidney which had to be removed. Twenty months previously I had performed a nephrotomy on the left kidney, following it six months later by a perineal section, great improvement in his general health and comfort resulting, but the constant leakage was very annoying and the prospects of eventually saving his kidney were so slight that at his urgent request its removal was decided upon. Having become somewhat familiar with operative methods by this time, he was very much concerned about the length of time it would require for the ligature to come away from the pedicle. The pluck displayed by this man during his long siege had elicited the sympathy of all with whom he had come in contact, and we set to work to devise means of surmounting the difficulties presented, and of getting him well in the shortest possible space of time that he might accept a position then being held open for him.

No more feasible plan presenting, the kidney was removed by the extraperitoneal route, six silk ligatures being required on the thickened pedicle. The knots were made to fall on the outer surface of the pedicle and as close together as possible, and the ends, left long, were brought out through a large rubber drain, after being marked for future identification. On the seventh day, convalescence having been uninterrupted, the drain was removed and each ligature in turn being held taut it was followed down by the finger and the knot located. It was then an easy matter to clip the ligature against the finger tip, which protected the structures of the pedicle. Recovery was prompt, and our former patient is now the valued superintendent of the water-works and electric-light plant of a thriving little town in a neighboring State.

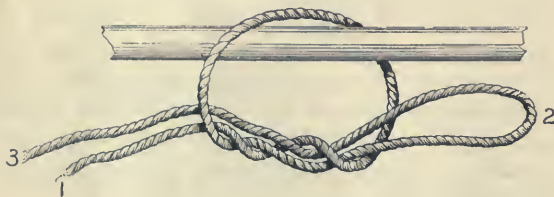
The use of the endoscope (Klotz tube and Otis lamp) suggested itself to me about this time and has since proved of service, the ends of the ligature being drawn through the tube which is pushed down to the knot, when the thread can be cut with delicate long-handled scissors under the direction of the eye. Each of these methods is open to certain serious objections and drawbacks. In many cases an otherwise unnecessarily large drain must be kept in place for

some days, until the vessels are perfectly occluded. The necessary manipulations are somewhat painful and at the same time the ligature at the bottom of a long tortuous tract may defy such efforts at removal.

Attention was then directed to the application of the ligature in such a way that its knot might be untied and the thread extracted after its period of usefulness had expired. The necessity for thus providing for the removal of ligatures will hardly occur save in deep wounds and where considerable tissue must be constricted by the thread, and in such cases a friction knot on the first turn cannot be safely dispensed with. After some experimentation I hit upon a plan which at first sight appeared to solve the problem. A small but strong silk thread was laid under each knot as it was tied down, and one end of the ligature was cut short while the other, together with the "tractors," previously placed, was brought out of the wound. Traction on the last loop, aided by a slight see-saw motion, readily loosened the second knot. With one end of the ligature cut short (sometimes it seemed dangerously so) the first knot, if single, could also be untied, but not as readily as the other, as the thread could not be placed as squarely under the knot.

When the friction knot was substituted for the single knot on the first turn, trouble was frequently experienced, the threads rolling, becoming twisted and tightly locked. This did not often occur with a *soft, dry* twisted ligature or when *dry braided* silk was used, but if the ligature material was thoroughly wet and tightly tied, an undue amount of force was required to loosen the knot, if this could be accomplished at all. This difficulty was most frequently experienced when the ordinary twisted pedicle silk was used. This defect was partly overcome by looping the thread on the second turn of the friction knot

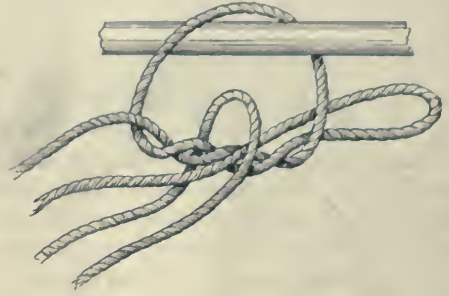
FIG. 1.



when, the second knot having been untied, traction on this end of the ligature, followed by traction on the first "tractor," would loosen both turns of the knot. The working of this device, however, was still far from perfect. By cutting one end of the ligature short and by using soft or braided silk moderate traction would usually untie the knot, but it appeared to me that this ease of execution was obtained at the expense of safety. This device was

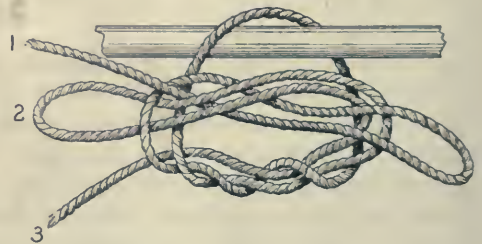
shown and its defects pointed out by me at a meeting of the Louisville Surgical Society March 9, 1896. Dr. Ap. Morgan Vance of Louisville had been present at the operation previously mentioned and had taken great interest in the question of the disposal of the ligatures. At this meeting of the Society, Dr. Vance demonstrated the use of a very ingenious device for burning through and liberating such ligatures. It depended upon the substitution

FIG. 2.



of a platinum loop for the "tractors," the end of the loop being brought out through the rubber drain. At the proper time, by means of a cautery battery, the wire was to be heated, when slight traction on the end of the ligature, left long for the purpose, would bring it away. Though theoretically perfect, many practical difficulties were found in the way of the extended application of this procedure, and in an endeavor to avoid some of its defects I finally devised a method of knot-tying, which, I think, cannot fail to serve a useful purpose in many cases of nephrectomy, hysterectomy, tubal operations, and possibly ovariectomy; in short, in all cases in which moderate traction can safely be made on the pedicle.

FIG. 3.



Looping the left hand thread (or reversing the steps, as may be most convenient), the loop is carried under its fellow, making two turns (a simple friction knot, except made with a loop on one side and a single thread on the other). A pair of hemostatic forceps previously snapped on the free end of the looped thread will facilitate handling. A second knot is now made over this by carrying the single thread back over the loop, tying a single bow knot.

If greater security is desired, it may be attained by tying a catgut thread tightly about the ligature ends close to the knot, which will insure against slipping by accidental traction when completing the dressing; or a preferable plan in some cases is to complete the second knot like the first, by looping the single thread and making a friction knot between the two loops. This knot is easily and quickly tied, and with a single thread is perfectly secure, and can be untied at any time with ease by traction applied alternately to the ligature ends, which must be left long for this purpose. The loops may be made short and left at the bottom of the wound, or, longer loops being made, brought out with the ends of the ligature and clamped together with a hemostat, when all risk of disturbing the knot by accidental traction on the one important thread is avoided.

The special advantages possessed by this knot are apparent: (1) No special apparatus or assistance is required in its application; (2) only one thread is employed; (3) the knot is easily, quickly, and securely tied; (4) it can only be disturbed by traction on one thread; (5) it is readily untied by moderate traction; (6) there is no danger of locking of the thread; (7) only a small opening is necessary for the emergence of the ligature ends and the removal of the ligature.

EPILEPSIA ALKOHOLICA.¹

BY HEINRICH STERN, PH.D., M.D.,
OF NEW YORK.

MORE powerful than the Pope in the darkest periods of medieval ages, more potent than the strongest bonds of solidarity, more arbitrary than any religious decree has ever been, alcohol holds its sway over the entire world and rules indomitably the fate of nations and of man. The influence of alcohol, conquering the mightiest and overwhelming the fittest, was deified, for humanity in its childhood, at the dawn of civilization, idolized and worshiped all, which to it was invincible, impenetrable, and mysterious. Alcohol has exterminated tribes, caused the degeneration of nations, created unhappiness and suffering, spread destitution and misery, and exerts its baneful influence even upon the unborn progeny.

Small doses of alcohol increases the appetite and the digestive function, causing an augmented flow of gastric juice. In larger quantities, the appetite is lost and nausea may appear, while the digestive power is suspended. Long-continued indulgence in alcohol produces, among the somatic symptoms, dyspepsia and gastric catarrh, fatty and atheroma-

tous degeneration of blood-vessels, heart, liver, and kidneys, hyperesthesia, anesthesia, and, in a few advanced cases, hemianesthesia. It produces sensory disturbances, as of vision, loss of pupillary reflexes, subjective noises (ringing and tingling); motor disturbances, as tremor, gross or fibrillary twitchings of the tongue, disturbances of speech; in grave cases, epileptic neuroses, and finally paralytic conditions of the muscular system. Among the psychic symptoms occurring as the result of excessive use of alcohol are gradual decrease of memory, confusion of judgment, impoverished imagination, decrease of moral sense (complete moral degeneration in very advanced cases) and morbid irritability.

Such is the somatic-psychic result of chronic alcoholism. These changes are more or less pronounced, and are dependent in their degree of severity upon different facts, among which I may enumerate the form of alcohol beverage and chemical type of alcohol used, the duration of alcoholic poisoning and resistance of the individual constitution, and environment. The mildest type of chronic alcoholism is represented in the drinker who indulges in alcoholic beverages more on account of habit than of desire. This species of habitual drinker is often for a long time enabled to attend to his vocation, and with the exception of a chronic gastric catarrh and occasional attacks of hemicrania and vertigo, no other bodily symptoms of alcoholism may be detected. The more advanced types of alcoholism, however, present in addition thereto a train of neurotic symptoms such as tremor, paralysis, epilepsy, and disturbances of intellect. One symptom, though, every stage and every degree of chronic alcoholism possesses in common, and that is the defect of the moral sense, the progressing decay of morality. In the beginning it is not easily detectable and often is recognizable only in the indifference toward family ties, in inattention to the demands of refinement, in the relaxation and cessation of former ideal aspirations, and in a too yielding and condescending disposition. Toward the latter stages of alcoholism there is complete decay of ethical sense and of morals.

This alcoholic degeneration which, *per se*, does not necessarily indicate a well-defined disease of the mind, is the basis of the real psychosis. Chronic alcoholism, especially in its initial and less-advanced stages, often only predisposes the drinker to neuroses of intellect, and makes him particularly susceptible to contagious and infectious diseases. In severer cases of alcoholic poisoning we find the vitality and resistance completely undermined, and we meet with grave disturbances of psychical life. These disturbances are all of a toxic origin and are pronounced

¹ Read before the New York Medico-Legal Society.

cachectic phenomena, which, though not solely and absolutely characteristic of alcohol poisoning, occur always in typical forms after abuse of alcohol, thus suggesting their dependence upon the toxic influence of the latter. In the train of alcoholic degeneration we notice a number of distinct types of psychoses, among which are delirium tremens, delirium tremens febrile, alcoholic melancholia, alcoholic mania, alcoholic dementia and alcoholic epilepsy.

Alcoholism in its acute and chronic form, may become an important etiologic factor of epilepsy, and before proceeding further, I may be justified in explaining in a few words that "epilepsy," according to our present state of knowledge, implies, (1) loss of consciousness with tonic-clonic convulsions of one or more muscles of the body—the so-called *grand mal*; (2) loss of consciousness without or with only very slight convulsive movements—*petit mal*; and (3) certain phenomena acting as equivalents to the typical symptoms. Epilepsy, like fever or cough, is only a symptom, and not a disease *per se*. For the sake of convenience it may be subdivided into two great classes, *viz.*, epilepsy caused by traceable organic disease, and epilepsy which may be termed idiopathic. I further divide symptomatic epilepsy into that form caused by anatomic changes—*molecular epilepsy*, and that caused by toxic influences, toxic epilepsy, and classify idiopathic epilepsy as being not traceable to anatomic substrates of pathologic change, or to toxic influences. The idiopathic type is an affection of the vasomotor center in the medulla oblongata (probably also of the center in the cortex cerebri) and is dependent for its manifestations upon an increased irritability of the same; and we may term this type a vasomotor neurosis.

Symptomatic epilepsy—the type produced by organic lesions or by chemic influences—does not resemble the idiopathic type. Some observers have noticed, however, that the more deviating and atypical the seizures are, the more both types resemble each other, and that in some cases all phenomena of the idiopathic type also occur in the symptomatic form, and *vice versa*, in certain cases the lines of demarcation between the two types are finally obliterated. Such cases have been recorded by Meyer, Levy, Hirt, Landouzy, Sireday, and Adamkiewicz.

And now let us see what different authors have to say about the etiologic relation of alcoholism to epilepsy. Schüle says, "Much greater and more pronounced [than the effects of acute alcohol poisoning] are the injurious results of chronic alcoholism. This is manifested in two ways, (a) on the blood, the corpuscles of which change the coagulability of

the fluid being increased, and (b) on the nerves whose functional activity first become stimulated, then over-excited and finally paralyzed. In grave cases we find here the motility neuroses of epilepsy." Portal states, "Experience has proven that not only children but adults after excessive use of food stuffs—and especially of alcoholic beverages—have become epileptic. Tissot and other observers of this type of epilepsy have found some cases where the seizures lasted only during the time of the acute indigestion, but they report other cases in which, after the indigestion had disappeared, the attacks recurred and become more frequent and violent." Magnan asserts, that those acute alcoholics who have epileptic seizures nearly always indulge in absinthe.¹ He thinks that those in whom acute alcoholism occurs, and in whom the epileptic symptoms do not appear, are users of wine or brandy. Nothnagel says, "Although not so frequently as generally supposed, certain causes seem actually to be the etiologic factors of epilepsy. The first place among these causes belongs to the habitual drinking of great quantities of alcoholic liquids, in other words, to dipsomania. *Epilepsia potatorum* has long since been recognized. The seizures of the latter, leaving aside the complications and violent symptoms of alcoholism in the intervals, are nearly analogous to the attacks of ordinary epilepsy. . . . The first appearance of the seizures does not always precede the other grave symptoms of alcoholism, but the epileptic seizures may even introduce the whole train of symptoms characteristic of that condition. The first seizure occurs now and then just after a heavy intoxication, at other times, however, at such a period when, on account of certain reasons, total abstinence had been observed; in still other cases an external accidental influence effected the first insult." Nothnagel, in his further explications, disproves Magnan's assertion that the epilepsy of drinkers is caused only by the excessive indulgence in absinthe, and he shows that although comparatively little absinthe is consumed in Germany, the *epilepsia alcoholica* is not of rare occurrence in that country.

Hamilton states, "Alcoholic epilepsy I do not regard as being the rare affection some authors consider it. In cases of prolonged saturation, where perhaps there are no other symptoms of chronic alcoholism, I have found it perhaps associated with the trance state (cataleptoid) or appearing in the

¹ The leaves and tops of *artemisia absinthium* contain absinthin, a very bitter, yellowish-white constituent and a volatile oil, to which the effects upon the nervous system are principally due. A tincture, flavored with aromatics, form the cordial "absinthe" largely used in France, where its injurious effects have attracted the attention of the sanitarians. Absinthe certainly exerts a specific physiologic action, but it must not be forgotten that the preparation is of an extremely alcoholic nature.

psychic form. . . . Alcoholic and absinthe epilepsies are usually preceded and followed by symptoms indicative of profound saturation. . . . Alcoholic epilepsy is symptomatic. The meningeal thickening of alcoholic origin may be the pathologic basis of very intractable paroxysms."

Westphal observed epileptic seizures in individuals, who only manifested an epileptic condition during an attack of delirium tremens.

Forel noticed that, "Whisky drinkers, especially, develop *epilepsia alcoholica*, which is curable through abstinence." Demme says, "From cases occurring during a period of twenty-eight years at the Jenner Hospital for Children, we have collected a series of published observations, partly from the twenty-second, partly from the twenty-seventh yearly report, which confirms the truth of the conclusions that the artificial increase in arterial tension produced through the influence of alcohol is full of risk and is irrational. There are cases of epilepsy and chorea in older children not affected with hereditary alcoholic influence, in which, according to the history of the case, the copious and steady use of alcoholic drinks was unquestionably responsible for the seizures; the etiologic importance of the alcohol in these cases is proved by the fact that after the complete withdrawal, while under hospital care, without the use of medicine, the epileptic attacks ceased, and the chorea was cured within a comparatively short time. With reference to the question as to whether in childhood the more serious illnesses are directly influenced by the early use of alcohol, I repeat that, in accordance with our observations, there is no doubt that marked excesses in the ingestion of brandy, also of wine, may lead to general epilepsy, certainly one of the most serious and obstinate diseases of the nervous system. Fortunately, however, this result of alcoholism is of rare occurrence."

The observations of Dr. James Edmunds are also appropriate in this connection. These demonstrate the probability of the sequence of convulsions and other forms of brain irritation after the plentiful use of alcoholic drinks given by mothers and nurses for the purpose of quieting the infant.

Alcoholism, however, is not only a possible etiologic factor of epilepsy in the case of the subject himself, but also of epileptic or epileptiform affections in his offspring. I do not say that the acquired epilepsy of the parent *per se* is transmitted to the children or to the following generations, but I do assert that the alcoholic degeneration¹ (which is not merely a symptom but a traceable somatic deteriora-

tion) under certain conditions is apt to produce again in the progeny the epileptic symptom of the parent, and this even occasionally in a more pronounced and aggravated form. In other words, the inherited alcoholic degeneration predisposes the offspring to an early epilepsy.

Krafft-Ebing says: "It is probable that otherwise mentally sound and sober parents if coitus and intoxication accidentally concur, beget imbecile and even idiotic, or epileptic-idiotic children." Hitzig states that the offspring of drinkers inherit as great if not a greater tendency to diseases of the nervous system than the children of nervous parents or those of unsound mind; such children, he says, die from convulsions and other epileptic conditions very early in life, more frequently even than do the children of nervous parents.

Demme, during a period of twelve years, acquired accurate knowledge of the private circumstances of ten families belonging on the one hand to the drinking, on the other to the temperate, class. Thus of fifty-seven children of habitual drinkers there were only ten, or 17.5 per cent. in normal condition during their childhood, while of the sixty-one children of the temperate families, 50 or 81.9 per cent. were in a normal state in their youth. Out of the fifty-seven children of the drinkers, twenty-five died during the first weeks or months of life, some from lack of vitality and some through eclamptic seizures (edema of the brain and its membranes). Six children were idiots, five children remaining almost dwarfish. Five children, as they grew older, became subject to epileptic attacks. One boy was afflicted with severe chorea, which terminated in idiocy. Five children had congenital diseases. Two of the epileptics referred to were themselves alcoholics as a result of hereditary transmission; the outbreak of their trouble was directly connected with pronounced acute alcoholism and was directly continuous with it.

Schüle remarks: "The instances of epileptic children begotten during intoxication, which were procured by Demeaux, Flemming, Ruer, and others, are not only testified to by their sad frequency, but are also proved experimentally by the birth of healthy offspring if the father in the meantime became freed from his passion." Tiedeman is of the opinion that children generated during intoxication will suffer from such incurable nervous disease as epilepsy, and he thinks that posterity suffers for the sins of the fathers. Wilson states that the descendants, without possessing a special appetite for strong drink, and in the absence of certain specific, morbid manifestations, are singularly liable to mental and nervous diseases, especially to convulsions and epilepsy. Torget is of the opinion that

¹ I refrain from speaking of the inherited alcoholic habit of the parents, which may be the result and symptom of an inherited psychopathic affection.

chronic alcoholics always beget epileptic children, while an acute and accidental intoxication of the father at the time of coitus would not produce such a result in the offspring.

Although epilepsy due to alcoholism is a well-recognized fact, the literature upon this subject is quite scarce, and wherever I have found quotations alluding to that condition they invariably have been only of an abbreviated nature. It seems to me that either sufficient attention has not been given by otherwise careful and painstaking observers to the epileptic symptom of alcoholism, or that they have considered the latter such a well-proven fact that they have deemed it unnecessary to present conscientiously prepared statistics or to attempt pathologic explanations.

Alcoholism—especially in its chronic form—is rather a typical condition of somatic and psychic deterioration than a clearly defined disease, a condition which is characterized by lesions of the nervous system and the viscera, by grave disturbances of nutrition, and by pronounced intellectual and ethical deterioration. Congestive and inflammatory processes, sclerosis, steatotic and atheromatous degeneration, affect the different tissues and organs of the body and produce their specific and typical train of symptoms. Hence, the epileptic symptom of alcoholism is the outcome of chemic or anatomic changes.

Although alcoholism produces easily recognizable anatomic changes, which in turn may again give rise to epilepsy or other symptoms of degeneration, I hold that those chemic alterations of the composition and vital energy of the plasmic units, which we cannot definitely comprehend at the present day, and which in this instance are brought about by the influence of alcohol, are the principal causative factors of the type of epilepsy in question and of kindred neuroses. The nutritive exchange of the cells in an organism saturated with alcohol is impaired. The normal vital activity of the plasmic unit, its inherent ability to affect chemic change, is partly or totally suspended, is paralyzed, if physiologically, and poisoned, if chemically, viewed. This is especially true of the cells of the nerves, and if nerve matter and nerve tissue becomes in any way impaired, serious consequences will result in the nervous system as well as in the system at large.

Anatomic changes may be the result of impaired molecular nutrition, but long before these are developed and are recognizable, chemic changes must necessarily have taken place. We must turn to physiologic and pathologic microchemistry, therefore, and not to mere pathologic anatomy, if we wish to trace the very beginnings of degeneration. That

the chemic changes due to alcoholism, even if no anatomic degeneration has taken place, are alone capable of producing the neuroses of alcoholism, as epilepsy, is my firm conviction, although I cannot conclusively demonstrate it to-day.

Concerning the symptomatology of *epilepsia alcoholica*, I wish to state that while in some cases epilepsy is only of secondary importance, being merely an occasional symptom of the alcoholic condition, it is necessarily of the utmost value and consequence in such cases, in which the other symptoms of a former alcoholism have disappeared or are obliterated, for *epilepsia alcoholica* will persist as long as the epileptic seizures continue, as it originated as a result of alcoholism. The latter, in the meantime, may apparently have been obliterated. The general characteristic indications of the condition of acute or chronic alcoholism, plus the symptoms of epilepsy in its *petit* or *grand mal* or equivalent variety, are also the characteristic features of *epilepsia alcoholica*. However, these symptoms do not all appear together. During the paroxysms the epileptic features are easily recognizable, while during the intervals the symptoms of alcoholism may more or less present themselves. In many cases, during long intervals, especially, there are even no characteristic evidences of alcoholism. The *petit* and *grand mal* varieties, the first with a comparatively long-continued unconsciousness, were the conditions met with in my cases. I have not as yet seen a case of alcoholic epilepsy in the state of the epileptic equivalent.

I am able to report five cases of pure alcoholic epilepsy which have occurred in my private practice. This number may seem large but certainly is not unusually so in this region, for I contend that *epilepsia alcoholica* is of much more frequent occurrence than practitioners in general are led to believe. If the physician spares neither time or labor in minutely studying the previous history of his alcoholic patients, he will soon be convinced that the convulsions and unconsciousness will possess an epileptiform or a genuine epileptic character in many instances.

CASE I.—H. W., male, aged 41, of German extraction, married, musician, comes from a healthy stock. With the exception of the usual exanthematous diseases of childhood, he had never been sick, and showed no symptoms of any organic affection. In his thirty-seventh year he suffered from the strain of incessant work, and to prevent collapse he resorted to the excessive use of alcoholic stimulants. One night, when playing in an orchestra, he had what he considered a "fainting spell"—a loss of consciousness of about one minute's duration. After that time he experienced severe headaches, occasionally continuing for three days, and kindred attacks,

sometimes two or three in succession. During this period, in which he continued to drink, his wife noticed a progressing *debilitas memorie* and a slower and more retarded manner of speech, also occasional paroxysms with loss of consciousness and consequent stupor. The deprivation of alcohol, and a general anti-alcoholic treatment improved the patient to such an extent that he now has, on an average, only about one seizure in two months, the attack being of the nature of *petit mal*.

CASE II.—J. P., male, aged 49, German, unemployed, married, father of three healthy children; parents were healthy and lived to old age; no neuroses in other members of the family. The patient did not remember ever having been sick. Examination revealed irritability in the epigastric region and internal hemorrhoids. Six years before I saw him the patient, on account of reverses in business, contracted the alcohol habit. He occasionally drank until he became unconscious and remained in a lethargic condition for thirty hours or longer. About a year afterward, typical epileptic paroxysms set in. These always occurred after a well-marked prodromic stage of headache and vertigo, and were ushered in by an aura epileptica of a sensorial nature, the patient experiencing a sensation of something rising from the stomach to the pharynx.

I happened to be present during about sixty attacks of this nature, each one invariably being preceded by the characteristic epileptic cry. Unconsciousness, tonic-clonic convulsions, cyanosis, grinding of the teeth, foaming at the mouth and post-epileptic stupor and weakness characterized the attacks. On account of spasmodic contractions of the urethra after the paroxysms, I had to resort occasionally to the use of the catheter, the introduction of which was difficult. Analysis never revealed the presence of any abnormal urinary constituents.

At the present time the patient is well nourished. Tremor is present in hand and feet, speech is very slow and incoherent, and there is occasional aphasia. Progressing amnesia, deterioration of intellect and loss of will power are marked. The epileptic attacks, though rarer, continue, but three or four always occur in succession—within six or eight hours. Sooner or latter the patient may be the subject of epileptic dementia.

CASE III.—On June 1, 1895, I was called to see J. A., female, aged 45, Irish, married, mother of eight children who are all alive. Personal and family history good. The patient complained of "sour stomach" and "sick headache." A superficial examination convinced me that she had been drinking, which she admitted. Family affairs had driven her to the use of whisky, the first dose of which she had taken two days previously. After prescribing a powder containing acetanilid, bicarbonate of soda and citrate of caffein, I left her. Toward evening of the same day I again was summoned. I found the patient in a state of somnolence. The attendants told me that she had had "a fit and twitchings all over the body." Soon after she awoke and regained her senses, but within a few

minutes she had a second attack, which was undoubtedly of an epileptiform type. During the night she had two similar seizures. The occurrence of previous epileptic paroxysms was absolutely denied by the family and by the patient herself. The following day she felt quite comfortable, although complaining of slight vertigo and a burning sensation in the urethra during micturition. The epigastric region was tender on percussion, congestion of the liver and gastrohepatic catarrh being present.

On June 2d an analysis of the urine demonstrated the presence of mucin and alkaline phosphates in excess, and of acetone (C_3H_6O) and diacetic acid ($C_6H_{10}O_3$). On June 4th there were traces of acetone and diacetic acid, and on the 6th the urine was perfectly normal.

The patient discontinued the use of alcohol until the middle of March, 1896, when she indulged freely again. On the 18th of that month she had an epileptic seizure similar to those which occurred during the previous June. On March 20th, 24th, and 25th the attacks recurred. On the latter day I observed some characteristic features of alcoholism, there being tremor and trembling of the tongue, great impairment of the appetite and digestion and obstinate constipation. Amnesia, semi-unconsciousness, hallucinations, great fear and a suicidal tendency, which were reported to me, convinced me that her state was one of melancholia alcoholica. The hallucinations continued and were of a religious character. This condition lasted for about two weeks, during which time she refused all nourishment but milk. The urinalysis showed an excess of alkaline phosphates and traces of acetone and diacetic acid.

From July 16th to July 26th the epileptic seizures recurred at intervals, the tremor, incoherent language, melancholia and defective memory continuing. During the night of September 5th I was summoned to the patient and found her lying on the floor breathing heavily and totally unconscious. Her eyes were staring and wide open. From that time until October 6th she was more or less unconscious but had some lucid intervals of very short duration. During a fortnight a quasi-continuous convulsive epileptic condition prevailed, the patient having as many as fifteen daily seizures. Repeated urinalyses revealed the presence of acetone and diacetic acid. After being in a profoundly comatose state she finally died on October 6th. The family did not permit an autopsy.

CASE IV.—G. H., male, aged 38, American, merchant. Individual and family history good. This patient had a peculiar habit of going once a month "on a spree," and generally stranded in some suburban town, from whence he came back to the city a sober man again. In March, 1895, during one of his whisky excursions, he suddenly developed symptoms which seemed peculiar and strange to the trained eye of the innkeeper at whose place he stopped, and that evening he was brought to my house and left under my care. During the night he had a specific attack of epilepsy. Physical and psy-

chical examinations on the next day revealed the presence of flabby muscles, deficient reflex irritability, a fresh wound on the tongue, from biting, extreme nervousness, restlessness, insomnia, a very slow manner of speech, and a morbid state of dreariness and discouragement. The urinalysis showed an excess of phosphates.

Energetic anti-alcoholic treatment (partly of a moral nature) resulted in a perfect cure of the alcoholic condition, as well as of the epileptic symptoms. The patient became a total abstainer and has remained so ever since. He is now a man of 250-pounds' weight, healthy, vigorous, and ambitious.

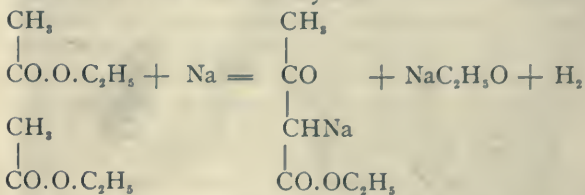
CASE V.—M. H., female, aged 40, German, spinster, weakly developed, first came under my care about two years ago. Her former physicians had ordered her to take cognac as a general tonic and stimulant. She thus contracted a moderate liquor habit. When first seen she complained of dizziness, migraine, disturbed vision, neuralgic pains in the dorsal region of the spine, forgetfulness, aphasia, and occasional unconsciousness. She explained that "a peculiar sensation would come over her and she would faint." I repeatedly had occasion to be present during some of these attacks, and I am convinced that they were epileptiform, resembling *petit mal*. She had her first seizure about three months after her medicinal indulgence in alcohol. Previous epileptic attacks were positively denied. The use of alcohol was forbidden and the attacks became less frequent. The patient has had no seizure for the last eight months.

The earliest period at which any of my patients have first been attacked with alcoholic epilepsy has been during the thirty-seventh year, and the latest period during the forty-fifth year. The number, however, is too small from which to draw any deductions as to the period of life in which *epilepsia alcoholica* most frequently occurs. Case III., interesting in every respect, is particularly so on account of the absence of glucose and the unfailing presence, after the attacks, of both acetone and diacetic acid in the urine.¹ To my mind, there is no doubt that the occurrence of acetone and diacetic acid in this

instance was due solely to alcohol, particularly so as the patient at those periods had no desire for food at all and sustained life with small quantities of milk only.¹

This is the more convincing when we consider the relationship of alcohol to acetone and ethyl-diacetic acid.

Ethyl acetate, $C_2H_5O.O_2H_5$, is prepared by distilling an acetate with sulphuric acid, H_2SO_4 , and alcohol, $C_2H_5.OH$. Metallic sodium dissolves in ethyl acetate, with the formation of sodaceto-acetic ether and sodium ethylate.



If acetic acid is added to the solid product, acetic ether (ethyl-diacetic acid) $CH_3CO.CH_2.CO.OC_2H_5$ ($C_6H_{10}O_5$), separates as an oily liquid. Ethyl-diacetic acid under the action of alkalies takes up water and decomposes into acetone, alcohol, and carbon dioxide, $C_6H_{10}O_5 + H_2O = C_3H_6O + C_2H_5O + CO_2$.

Alcohol, in my opinion, caused acetonemia and diacetemia in the case of the third patient. One or the other or both of these conditions may possibly have been the direct etiologic factor or factors in the epileptic attacks. However, there is no doubt that the long-continued comatose condition before the final catastrophe was due to diacetemia, or to a very kindred condition.

As to the prognosis of *epilepsia alcoholica*, I can only say that it depends entirely on the alcoholic condition of the system. As for the treatment, the usual antidotes for alcoholic poisoning and saturation should be administered.

From a medico-legal standpoint, *epilepsia alcoholica* should prove very interesting. While alcoholic intoxication, according to the prevailing laws, does not excuse from legal responsibility, the peculiar epileptic consciousness, or rather unconsciousness will, at least it has done so in one or two instances on this side of the Atlantic. The great cardinal factor, alcoholism, is not recognized by our antiquated system of justice as a legal cause of irresponsibility, but the more occasional symptom of that condition, *epilepsia alcoholica*, if brought forward as a defense, would, in all probability, be recognized as such.

¹ Detection of acetone. (Heinrich Stern, "Urinalysis," New York, Pelton, 1897.) Chautard's test: Reagent, aqueous solution of magenta decolorized by sulphurous acid. To five cubic centimeters of the urine add one drop of the reagent. If acetone is present in quantities over 0.01 per cent., a violet color will appear after five minutes.

By Lieben's test: Reagents, potassium iodid and liquor potassæ. Distill a small quantity of the urine, if possible. Take into a test-tube four cubic centimeters of liquor potassæ, add 1.35 grams of potassium iodid and boil; next float the urine (a distillate, if possible) upon the test solution. Notice at the point of contact precipitation of phosphates, which becomes yellow and filled with molecules of iodoform if acetone is present.

Detection of ethyl-diacetic (diacetic) acid by V. Jaksch's test: Reagents, ferric-chlorid solution, sulphuric acid, and ether. To the freshly voided urine add a few drops of ferric-chlorid solution. If phosphates are thrown down, filter and add a few drops more of the ferric-chlorid solution to the filtrate. If a red color appears, boil half the quantity of urine and to the other half add some sulphuric acid and ether. If the red color is not pronounced, or does not occur at all in the boiled urine, and if it becomes of a lighter shade after twenty-four hours in the sulphuric acid-ether-mixture, and if acetone in excess is found in the distillate, diacetic acid is present.

¹ Acetone and diacetic acid may be products of albumin decomposition, and acetone occasionally appears after the excessive use of food-stuffs rich in proteid matter. The amount of milk taken by this patient was, however, so very insignificant that the formation of acetone and diacetic acid can only be ascribed to the excessive use of alcohol.

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**SHORTENING THE ROUND LIGAMENTS
 THROUGH THE ANTERIOR VAGINAL
 FORNIX FOR POSTERIOR DIS-
 PLACEMENTS OF THE
 UTERUS.¹**

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It is an accepted axiom of therapeutics that the greater the number of drugs recommended for a specified condition the greater the probability that none of them is reliable. What is true of drugs is also true of surgical procedures, and no study of treatment illustrates this principle more conspicuously than the management of retrodisplacements of the uterus.

The consensus of opinion is now centering upon the round ligaments as the most serviceable structures to utilize in any method which aims at maintaining the uterus in a normal, anteverted position, and the operation which is most popular at the present time is that of Alexander. The objections to this are its narrow field of application, the uncertainty in all cases of finding the round ligaments sufficiently strong at this part of their course to withstand the necessary manipulations and strain, the unsightly scars which the operation necessitates, and the increased susceptibility to hernia.

The field of application of Alexander's operation has been extended to include cases of adherent uteri by introducing the preliminary steps of a vaginal section, breaking up the adhesions, and setting the uterus free. But when once the vagina has been incised and the pelvic cavity entered, the opportunity

is offered of shortening the round ligaments through the vaginal incision, and thus relieving the patient of the additional inguinal wounds, the danger of herniæ, and the objectionable scars.

As the majority of persistent retrodisplaced uteri are associated with more or less extensive disease of the appendages and accompanied by adhesions, the vaginal incision becomes necessary if Alexander's operation is to be employed. Mackenrodt took advantage of the situation thus presented in making the vaginal incision anterior to the cervix, separating the bladder from the uterus, entering the peritoneal cavity through the peritoneal fornix between the bladder and the uterus, passing his finger over the uterus, setting the organs free from their adhesions, and stitching the uterus to the vaginal walls. I have performed this operation a number of times, with most satisfactory results as far as the relief of all symptoms was concerned. The unfortunate interruption of pregnancy in some cases and the serious consequences attending labor in others, which were reported by operators in Germany, were sufficient to deter further employment of the procedure. The feature of the operation which was fatal to its success was the involvement and fixation of the anterior wall of the uterus, preventing its proper development and expansion during gestation. If this could be eliminated, the remaining steps of the operation seemed to present the best method of dealing with persistent retroposed uteri. The advantages of the operation impressed themselves so favorably upon a number of different operators that we find them vying with each other in endeavoring to modify it in such a manner that the fixation of the uterus itself might be avoided while its normal position was maintained. That they should turn at once to the round ligaments as the proper means through which to accomplish this is most natural; and we find Wertheim¹ attaching the round ligaments at a point one or two centimeters from the horns of the uterus to the vaginal wall, and in one case simply shortening the round ligaments by doubling them on themselves and fastening them in that position by means of silk sutures. Guenther,² after setting the organs free from their adhesions, working through the anterior vaginal incision, suspended the uterus by its round ligaments by passing a silk suture through the abdominal wall from within outward and tying it on the skin. Kiefer,³ of Martin's clinic, adopted a more systematic plan of doubling the round ligaments on themselves, after Mann's method, working through the anterior vaginal incision. He also proposed suspending the

¹ Read at the Twenty-second Annual Meeting of the American Gynecological Society, held at Washington, D. C., May 4, 5 and 6, 1897.

¹ *Centralblatt f. Gyn.*, March 7, 1896.

² *Ibid.*, March 28, 1896.

³ *Ibid.*, April 11, 1896.

uterus by the round ligaments, passing the needle through the abdominal walls from without inward, guiding its point by his finger passed through the vaginal incision.

Byford¹ of Chicago working along the same lines at the same time, not only shortened the round ligaments through the vaginal incision, but strengthened this support by attaching the fundus of the uterus by means of two catgut sutures to the bladder peritoneum at as high a point as could be reached. The latter procedure he regards as an additional safeguard in that it assures a return of the fundus forward during the contraction of an emptying bladder. Dr. Byford announced that he had operated upon ten patients by this method, and in each instance the uterus had remained in a normal mobile position without the aid of a pessary at any time.

During March, 1896, I operated upon a woman at the New York Polyclinic for the relief of an adherent, retroverted uterus. I intended to perform the Mackenrodt operation, but in separating the firm adhesions about the appendages of the right side the ovary was so badly mutilated on account of its degenerated condition that I decided to remove it. In doing so I caught up the round ligament, as well as the tube, in the ligature, and thereby shortened it so much that it noticeably steadied the uterus in its anteverted position. I therefore decided to utilize that structure for maintaining the position of the organ, and, catching up the round ligament of the opposite side, I doubled it upon itself and fastened it in that position with fine silk sutures. The result was all that could be desired in every particular. The woman returned repeatedly to the Polyclinic after dismissal from the hospital, and the success of the operation was demonstrated over and over again to the members of the class throughout the remainder of the session.

Stimulated by this success and by the reports of the various operators previously mentioned, I decided to systematically make use of the method in suitable cases in order to test its feasibility and value. I found that by making a free longitudinal incision along the anterior vaginal wall and separating widely the tissues between the uterus and bladder, it was not a difficult matter to pass one or two fingers over the fundus of the uterus, break up adhesions, and turn the uterus down through the incision into the vagina. It is surprising to one who has not attempted or witnessed it to discover how much more accessible, either for removal or for conservative treatment, the ovaries and tubes are through this anterior incision than through an opening into Douglas' pouch. After delivering the fundus into the

vagina the appendages, first of one side and then of the other, can be separated from their adhesions and brought down also into the vagina, where, within easy reach and in plain view, they may be removed or treated, as may be indicated, in accordance with the most approved idea of conservative work. In this way I have removed pus-tubes and ovaries, set the appendages free, tested the patency of tubes, excised ovaries, etc., finishing the operation in all cases by shortening the round ligaments. In some instances I have opened the sheath of the round ligament with an aneurism-needle, lifted the ligament out of its bed, lapped it upon itself, stitched it in that position with two silk sutures, and allowed it to disappear again beneath the peritoneum. My object in this was to take up more slack in the ligament, thinking I could make it run in its sheath, as is done by pulling upon it in Alexander's operation; but in each instance I found the ligament so adherent to its bed that it had to be dissected out by slipping the aneurism-needle, which had been hooked around it, back and forth, which procedure was attended by a most annoying hemorrhage. I, therefore, have abandoned this step of the operation, and content myself with simply catching up the ligament with artery forceps, lapping it upon itself, and stitching it with fine, twisted silk.

The technic of the operation is as follows: The patient is prepared as for vaginal hysterectomy. As a preliminary step the uterus is thoroughly curetted and packed with iodoform-gauze. Steadying the uterus by dragging down the cervix strongly with tissue forceps, a transverse incision is made across the vagina, about one inch in front of the cervix. It is better to make this incision at some distance from the cervix instead of at the vaginal junction because it allows the cervix to swing back more freely when delivering the fundus into the vagina. By blunt dissection, as in hysterectomy, the bladder is dissected from the uterus up to the peritoneal fornix. The edge of the transverse incision is then caught by two artery forceps near the median line, and while the anterior vaginal wall is steadied by these forceps a longitudinal incision, the entire length of the vagina, is made at right angles to the first incision, from its middle point to the base of the urethra. This extends through the vaginal wall. The bladder is then dissected from the vagina for a distance of an inch or an inch and a half on each side of the incision. The hemorrhage during this part of the procedure is very inconsiderable, consisting usually of general oozing. Any points which show a tendency to bleed may easily be caught in forceps and twisted or ligated. The peritoneum is now opened, and torn freely toward each side by passing the two index-fingers

¹ THE MEDICAL NEWS, October 31, 1896.

through and making lateral pressure. The finger can now be readily passed over the uterus and a thorough examination made of the retro-uterine space, the appendages, and the whole pelvic cavity. If there are no adhesions in the pelvis, it is a simple maneuver to hook the finger over the free border of the broad ligament near one horn of the uterus and bring it into the opening. By lifting the bladder with a strong retractor and making traction by the finger hooked over the broad ligament, the uterus can readily be delivered into the vagina by dragging down first the adjacent horn, then the fundus, and finally the other horn. It requires some patient manipulation to accomplish this with the fingers, but it avoids puncturing the uterus with any sharp instrument like a tenaculum or bullet forceps. The round ligament is now caught up with artery forceps as far from the horn of the uterus as will permit the point at which it is caught being drawn to the site of origin of the ligament. This distance varies from two and a half to three inches. A needle armed with fine, twisted silk is now passed through the round ligament midway between the forceps and the uterus, and again through the round ligament at a point an equal distance from the forceps on the distal side, and the suture tied. Another suture is passed through the round ligament at the point at which it is caught by the forceps and made fast at the point of origin of the round ligament from the uterus. One or two more interrupted sutures may be passed through the three segments of the ligament as they lie side by side between these two sutures, to relieve the strain on the first two and make the attachment more secure. The round ligament on the opposite side is treated in the same way, and the uterus returned to the peritoneal cavity. The longitudinal incision in the vagina may now be closed with a running catgut suture, closing the entire wound immediately, although I prefer to leave a small opening at the end of the incision next to the uterus and to tuck in a short piece of gauze, such as is usually employed for packing the uterus, between the bladder and the uterus, where I leave it for a day or two for the purpose of drainage. The vagina is now lightly tamponed with a strip of gauze, a self-retaining catheter is inserted into the bladder, a T-bandage applied, and the patient is ready for bed.

In cases complicated by extensive adhesions between the appendages and surrounding structures, or about the uterus itself, these must be carefully separated before the uterus can be drawn into the vagina. After the uterus has been delivered the appendages may also be drawn down and treated, as has been previously said, either by exsection, resection, amputation, or removal.

I have operated upon a number of patients by this method apparently with most satisfactory results. They have been under observation for periods varying from one year to two months. None of them has become pregnant, as far as I know. I simply introduce the method here as a suggestion, with the hope that it may commend itself, and be subjected to a thorough trial in other hands.

NOTES ON THE ADVISABILITY OF UTERINE TAMPONAGE AFTER CURETTAGE.¹

BY J. O. POLAK, M.D.,
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IN the September, 1896, number of the *American Gynecological and Obstetrical Journal*, Dr. J. H. Rishmiller of Minneapolis called attention to the indiscriminate use of gauze within the uterine cavity. Two clinical truisms from his paper exactly coincide with the writer's experience, *i. e.*, that the average temperature of the patient after curettage is lower without than with gauze packing; secondly, that the intra-uterine tamponage is a potent factor in the etiology of salpingitis.

From a varied and extensive employment of gauze for drainage or as a tampon within the uterus, the following facts have been noted: A strip of gauze will not drain the uterus unless the free end rests in a mass of absorbent material; even then, when this mass becomes saturated, drainage ceases and, the meshes being filled, further capillary action stops. Plain sterilized wicking drains better than gauze loaded with fixing agents and iodoform. Finally, firm packing retards rather than favors good drainage, as by its presence it excites the uterus to contract and forces the tampon down to plug the internal os, and hence the secretions are retained, and not finding an outlet are dammed back through the tubal orifices, with disastrous results. One or two drams of mucopus has followed the withdrawal of the packing in a large proportion of drainage cases. This amount of secretion was less in those instances in which the uterus had been washed out with a normal salt solution before the tamponade was introduced, and greatest in those in which a weak sublimate solution had been used for irrigation.

The writer has employed a gauze drain following curettage in 187 cases, and is convinced that drainage did not continue for more than twenty-four hours. Aside from this clinical demonstration, the gauze removed at this time was tested by placing one end in a basin containing normal salt solution while the free end was allowed to lie in a mass of loose gauze. At the end of two hours the receiving gauze was not even moistened. Other experiments on the

¹ Read before the Kings County Medical Association.

same lines have given very similar results. If drainage is to be used within the uterus, all that can be gained by its employment will be accomplished within twelve hours. Two cases of pyosalpinx have been directly traced to an intra-uterine tamponade. These patients were examined under ether prior to curettage, and the tubes were found to be normal. In a septic case in the writer's service, after thorough intra-uterine irrigation, a twist gauze drain was introduced to the fundus, and within four hours all drainage had ceased externally, yet on withdrawal, decomposing fluids escaped through the cervix, and the patient's temperature fell. After each re-introduction of the drain the fever increased.

In uterine hemorrhage we have a valuable means of control in the employment of gauze, but in order to make a firm compress, damp gauze must be used. After the bleeding has been controlled the gauze should be withdrawn little by little, and not all at once, as occasionally a secondary hemorrhage will occur immediately upon emptying the uterus. As a result of his experience, the writer prefers to drain by artificial means *only* in those cases in which the condition is a septic one, or when hemorrhage is free. In the former instance, the insertion of a Morris gutta-percha tube, which should be left in place for twelve hours, will suffice, while in the latter, a firm intra-uterine tamponade, which should be gradually withdrawn when uterine contraction occurs, is not objectionable. In aseptic cases the uterus will look after itself.

CLINICAL MEMORANDA.

CHOLELITHOTOMY; REPORT OF SEVEN CASES.

By I. S. STONE, M.D.,
OF WASHINGTON, D. C.;

SURGEON TO THE COLUMBIA HOSPITAL FOR WOMEN.

THE removal of calculi from the gall-bladder and the cystic duct may be accomplished without great danger to the patient, and afford prompt relief from persistent if not dangerous symptoms. It may be seen by reference to the following report that the clinical history of the condition varies greatly. There is no positive diagnostic sign by which one may ascertain the cause of biliary obstruction. We see many patients afflicted with jaundice, pain, nausea, and other symptoms who rapidly recover under appropriate treatment while others have recurrent attacks of pain and gastric symptoms, perhaps without jaundice, who have gall-stones and are permanently relieved only by operation.

The method of operating adopted by the writer is that given by Greig Smith in his work on "Abdominal Surgery," only with a preference for suturing the peritoneum to the sac instead of the sac to the skin. Mr. Smith mentions the fact that suture of the sac to the skin often

results in the production of a permanent fistula, and says: "Therefore, if we seek to have a fistula which will spontaneously contract and close, we must leave between the walls of the bladder and the skin a bare surface which will granulate freely." An incision is made just below the rib, over the gall-bladder, outside of and parallel to the rectus muscle. The peritoneum, when divided at this point, appears thick and firm and less elastic than in the median line, as there is less connective tissue between it and the underlying fascia. The gall-bladder once reached, and the diagnosis confirmed, a search is made for the ducts to ascertain if they are occluded. This may be quite difficult or impossible in some cases. If a stone is found in the cystic duct it is a better plan to aspirate the distended bladder, pack sponges around the sac, and remove the stone before the sac is sutured to the skin or peritoneum, but if stones are found only in the bladder the sac may be sutured at once and the stones removed.

A sound may be used for exploratory purposes, but there usually is abundant proof of the patency of the cystic duct in the abundant discharge of bile after the obstruction is removed. This does not insure the patency of the common duct, however, which must be carefully examined before the wound is closed. After thorough irrigation of the bladder, a drain is inserted and the wound neatly closed around it. There is no necessity of flushing the abdominal cavity, as all fluids may be readily removed by means of sponges.

CASE I.—Mrs. M., aged thirty, had had pain and swelling below the ribs in the region of the gall-bladder for several months before I was consulted with regard to the case by Dr. Mauss of this city. The tumor resembled an enlarged kidney, was somewhat tender and was movable in every direction except downward. The patient was admitted to Columbia Hospital, and an operation was performed on June 18, 1892. The opinion had been expressed by several physicians present that the tumor was a large kidney. It proved to be a distended gall-bladder, which contained several large stones. I neglected to take the precaution, however, to see that the cystic duct was open, as in subsequent operations. The wound refused to heal, and after several months, a stone was found in this duct, and a second incision was made for its removal. The patient made a perfect recovery, the sinus remaining after the first operation healing promptly.

CASE II.—Mrs. C., aged thirty. Referred to me by Dr. Carter of Virginia. All the symptoms in this case were acute, and a diagnosis of appendicitis had been made by her physician. The patient had had pain for more than a week between the rib and anterior superior spine of the ilium, the space being occupied by a tumor which was tense, tender to the touch, and only slightly movable under manipulation. Her pulse was 120 and temperature 102° F. She was removed from her home in Virginia to Columbia Hospital, and an operation performed on May 10, 1895. My diagnosis of distended gall-bladder due to the presence of a stone proved to be correct. The gall-bladder was sutured to the peritoneum, opened, and a stone weighing thirty grains was removed from the cystic duct. The patient made a prompt recovery.

CASE III.—Mrs. R., aged twenty-five, colored. Referred to me by Dr. Baggett of this city. This patient had been jaundiced for several weeks. She had a tumor in the region of the gall-bladder, extending nearly or quite to the level of the umbilicus. This tumor was sensitive to the touch, fixed in its position, connected with the liver, and, as in the other cases, could be lifted up from behind. A diagnosis of distended gall-bladder due to impacted stone was made, which proved to be correct. At the operation, May 22, 1896, a large number of gall-stones were removed from the gall-bladder, a rubber drain inserted, and the collapsed sac sutured to the peritoneum. The patient was well and left the hospital after two weeks.

CASE IV.—Mrs. McF. W., aged forty-five. Referred to me by Dr. Moran. This patient had been under observation during several months prior to her admission to Columbia Hospital in March, 1896. I had seen her in consultation, and confess to having given rather a gloomy prognosis. She had a tumor which was attached to the lower edge of the liver, and had vomited blood and mucus. In addition, her skin was of a decided icteroid hue, and the clinical picture resembled strongly that of cancer of the liver or stomach, or both. This attack, although quite severe, was recovered from and the woman returned to her work. She gave no distinct history of a sudden cessation of pain, and there was no diminution in the size of the tumor, but she was relieved temporarily by an escape of the contents of the gall-bladder through a fistula into the adjoining bowel, which process may be called a natural cholecystenterostomy. The gall-bladder was firmly contracted around several stones, which were removed through a long incision, and the sac was then inverted and closed throughout its entire length. This treatment of the gall-bladder had the effect of obliterating its cavity, which as it was no longer needed, seemed a desirable result. An attempt was made to separate extensive adhesions between the bowel and under surface of the liver. Nearly two hours were required to complete this very tedious operation and to tie all the bleeding vessels in the adherent surfaces of liver, bowel and mesentery. It may be seen, therefore, that this accidental escape of the infectious contents of a distended and possibly suppurating gall-bladder had nearly cost the patient her life from peritonitis. Iodoform gauze was carefully placed between the raw surfaces of the bowel and liver in order to prevent reformation of adhesions. She promptly recovered from the operation, the gauze was removed on the fourth day, and the wound gave no trouble whatever. She is in good health at the present time.

CASE V.—Mrs. G. W., aged forty-seven. Formerly in care of Dr. Tompkins of Virginia. This patient had all the symptoms of gall-stones, minus the jaundice. Instead, there was a blue color of the skin, due to the long continued use of silver nitrate for chronic diarrhea. It is impossible to say what the diarrhea had to do with the disease of the biliary ducts or of the gall-bladder. The history was too indefinite for clinical report. There was no pronounced enlargement of the gall-bladder, hence the diagnosis was not definite or conclusive. However, when

the bladder was found to be filled with many small stones the operation was completed in the usual manner, the patient making a very quick recovery. She sat up in less than a week, and soon afterward returned to her home. Operation April 4, 1896.

CASE VI.—Mrs. H. W., aged thirty-three. A patient of Dr. Woulhaupter. I had operated upon this woman for rectocele, and lacerated perineum during November, 1895. During her recovery from the operation, she experienced an attack simulating gall-stone colic. After her return home she continued to have pain in the region of the gall-ducts, to which were added indigestion, anorexia, and nausea. She was somewhat constipated and the occurrence of flatulence was so pronounced as to lead her to believe that her distress was due to that alone. The attacks of pain continued until she very reluctantly yielded to my suggestion that an attempt be made to remove the stones. Accordingly she entered my private hospital and the operation was performed on April 28, 1896. Only two stones, the size of buckshot, were removed. A drainage-tube was placed in the sac and kept in position for five days. When it was removed two other stones followed its exit, and as no more could be detected by means of the probe the wound was allowed to close. In this case, as in all of the others, the discharge of bile was very abundant until after the removal of the drainage tube, when it ceased spontaneously. This patient has not had the least discomfort since her recovery from the operation. She is now in perfect health.

CASE VII.—Mrs. W., aged forty-one. This patient, an intelligent colored woman, came to the hospital for the removal of a tumor occupying the space between the umbilicus and pubis, and supposed to be connected with the uterus. It did not descend into the pelvis and could not be moved above the umbilicus, although there was free lateral motion. She had lost at least eighty pounds in weight since the beginning of her illness, two years before. During this period, in addition to the symptoms clearly due to the presence of the tumor, she had almost entire loss of appetite and frequent attacks of nausea and vomiting. The clinical history pointed so strongly to the presence of disease of the stomach that a careful examination was made for cancer, but with a negative result. She had pain, but it was not clearly shown to be like that produced by the passage of gall-stones.

On November 21, 1896, I opened the abdomen and removed a dermoid cyst of the left ovary, containing thirty-two ounces of fluid, which was covered over its entire anterior, lateral, and superior surfaces by omentum. Nearly all of the omentum was removed with the tumor. Careful inspection of the stomach failed to disclose any organic change. There was no thickening, no dilatation or other change in form or appearance which indicated disease of the organ. On examination, the gall-bladder was found to be distended with calculi which were so firmly packed that the sensation imparted to the finger was that of polished ivory or marble. A second incision was made in the abdominal wall over the gall-bladder and after surrounding the bladder with sponges an incision was made into it and the stones removed. As a result of the im-

paction of the gall-stones, many of them had become imbedded in the mucous lining of the bladder, which necessitated enucleation and removal. With some difficulty the empty sac was sutured to the peritoneum, a drain inserted, and the wound closed.

My intention in this case was to cause the entire obliteration of the sac, as in Case IV. The plan has suggested itself in these cases as being preferable to a cholecystectomy, which would, perhaps, add some additional risk. This patient made a very rapid recovery. She had no nausea after the operation, nor has she had any return of the gastric symptoms. It is impossible to say that the reflex vomiting was entirely due to the presence of gall-stones, as the extensive omental adhesions to the ovarian cyst may have caused a displacement of the stomach downward, or in some unknown way have contributed to the general result.

Five of these patients were white, and two were negroes. One of the negroes was very black, the other a mulatto. The very black negress was not more than twenty-five years of age, while the other cases occurred in women from thirty to forty-seven years of age. All were married and had borne two or more children. With perhaps one exception, all had gastric distress, nausea or vomiting, or both. Only two had previously presented decided symptoms of gall-stone colic. Only one had the characteristic icteroid tint due to obstruction of the biliary ducts; consequently cholemia was not present except in two cases (III. and IV.). The woman described in Case IV. had previously suffered from cholemia, but it had disappeared after the formation of a fistula between the cystic duct and adjoining intestine. The presence of the bile in the urine, and its absence in fecal discharges, therefore, is not a reliable test for the presence of gall-stones, or even for occlusion of the cystic duct, having the same value as a symptom, and may be placed in the same category as jaundice, a result of obstruction of the hepatic or common ducts.

These cases are undoubtedly more frequent than was formerly thought, and probably many occur without their presence being discovered. In addition to the above-mentioned cases, others have been seen in consultation by the writer. Some of the patients refused operation, or afterward were treated by other surgeons. Two have died, and the diagnosis of gall-stones was confirmed *post-mortem*. Several had cancer in connection with the gall-stones. In one of these, in fact my first case, which occurred several years ago, I removed the stones from the gall-bladder, found that the cholemia was due to cancer, and sent the patient home two weeks later relieved of pain, but she died soon afterward as a result of hemorrhage from the liver through the track of the drainage-tube.

In six of these cases a correct diagnosis was made before operation. The seventh case required an investigation, the result of which shows the importance of careful examination of other organs than those suspected.

Perfect candor, however, demands mention of one recent case in which the diagnosis was incorrect. A woman had been sick for six weeks only, and had developed a tumor in the region of the pancreas, or between that organ and the gall-bladder, in the epigastric region. She had

slight pigmentation of the skin, and while there was a doubt expressed, a diagnosis was made of distended gall-bladder. It proved to be a solid tumor, located behind the peritoneum, attached to the aorta, encapsulated, and quite impossible of removal. It is a spindle-celled sarcoma of the aorta itself, or of a gland near it, a rare growth which in a comparatively short time must prove fatal to its possessor.

ALARMING SYMPTOMS IN A CHILD AFTER INGESTION OF KEROSENE OIL.

By T. EDGAR HOFFMAN, M.D.,
OF ROCHESTER, INDIANA.

ON the evening of July 10, 1897, Mrs. T. B. gave from twenty to thirty drops of kerosene oil to her fifteen-months-old son, who had a cold. When I saw the child, about twenty minutes later, it was limp and pallid, the pupils were contracted, the pulse 140 and of fair quality, and temperature in the groin 101° F. The respirations were slow and there was no perceptible movement of the chest. The inspiratory murmur was blowing, loud, and quickened, the expiratory murmur prolonged and diminished over the left side and entirely absent over the right side.

From the incoherent statements of the excited mother, I inferred that the child strangled and coughed immediately after taking the oil. I was undecided whether the condition I found was due to inspiration of the oil or to susceptibility to its toxic properties, or to both.

Immediately aromatic spirits of ammonia was administered and this was followed by repeated small doses of belladonna until all symptoms disappeared, leaving no bad results.

The accessible works on toxicology do not treat of petroleum poisoning, though cases are not rare, since the oil is in almost universal domestic use and is a popular local and internal remedy as an antiparasitic, antiseptic, counter-irritant, anthelmintic, antispasmodic, expectorant and diaphoretic. Frese (*American Text-book of Therapeutics*, page 72) says it is also used as an intoxicant, producing hallucinations and emaciation.

According to Schmiedeberg, petroleum belongs pharmacologically to the alcohol group. "Inhalation of the vapor induces hallucinations, heaviness of the head, vertigo, unconsciousness, and anesthetic stupor; cyanosis, vomiting and contracted pupils occur; one fatal case has been observed." Anemia and chronic bronchitis have followed long exposure to the vapor.

Two sets of symptoms have been observed from its internal use, according to Johanssen: (1) vomiting, with irritation of the mouth and throat, diarrhea and colic, involvement of the kidneys, albumin and formed elements in the urine, which gives off the odor of petroleum or violets; (2) headache, anxiety, vertigo, small and infrequent pulse, collapse, sometimes tetanic convulsions. According to the *National Dispensatory*, vomiting does not occur, nor usually diarrhea. Its application to the skin has resulted in severe inflammation; it may also produce general intoxication.

In the *Therapeutic Gazette* for September, 1895, page 604, Dr. Cheves Bevil reported a case of a child, two and one-half years' old, who drank coal-oil. The resulting symptoms were stupor, contracted pupils (eyes closed), cold extremities, pulse 135, and very weak, respirations 35 to 40 per minute, temperature 97° F., and odor of oil on the breath. Later, the throat became red and scalded-looking, and there was purging, photophobia, slight suppression of urine and albuminuria. The patient recovered. The *Medical Record* for January 2, 1897, printed an abstract from the *Berliner klinische Wochenschrift* of the report of a case by Dr. Johanssen. A rachitic child, who had had diarrhea, swallowed an unknown amount of the oil. This was followed by vomiting and unconsciousness, and death in coma occurred three hours after the patient was admitted to the hospital. Frequent pulse, difficult breathing, and comparatively low temperature were observed. He refers to two other cases in children, both of whom recovered.

These cases, with the one reported in THE MEDICAL NEWS, August 14, 1897, are the only ones occurring in children I have been able to find. I have found articles upon the subject in the National and United States Dispensatories, Schmiedeberg's "Pharmacology," and the "American Text-book of Therapeutics." I have examined, in addition, without result, Hamilton and Godkin's "Legal Medicine," vol. i, Witthaus and Beckers' "Medical Jurisprudence," vol. iv, "Twentieth-Century Practice," vol. iii, Allbutt's "System Intoxications," Ziemssen's "Cyclopaedia," vol. xvii, and the files of THE MEDICAL NEWS, *American Journal of the Medical Sciences*, *University Medical Magazine* and *Therapeutic Gazette*, for the last three years, and those of the *Medical Record* and the *Journal of the American Medical Association* for last year.

MEDICAL PROGRESS.

Curettage as a Routine Measure after Abortion.—In the *Buffalo Medical Journal*, August, 1897, GOLDBERG makes a plea for the routine treatment of abortion by curettage of the uterus. Although deaths after abortion are rare, yet subinvolution and displacement, and diseases of the endometrium and connective tissue often enough follow it. The bad results are in most instances traceable to the retention of parts of the ovum or membranes. It is most difficult to determine whether or not the uterus has completely emptied itself after an abortion during the early months of pregnancy, and by making use of a curette in every case, the patient is given the best chance of complete recovery. Goldberg has not found it necessary always to tell his patients that a curettage was to be performed, and does not employ an anesthetic. In all cases he uses a Sims' sharp curette, and has never seen any accident result from it.

The Woodbridge Treatment of Typhoid Fever.—In the *Jour. Amer. Med. Assn.*, July 10, 1897, WOODBRIDGE gives a few brief quotations from the reports of 193 physicians who have treated according to his method 2078

cases of typhoid fever, with forty-five deaths. He has now collected data of nearly 8000 cases, having a death-rate of 1.91 per cent. This includes every death known to have occurred under the treatment, or any modification of it. Several deaths in which the treatment was known not to have been properly applied, a large number in which the treatment was not commenced until after the patient was moribund or practically so, and a few cases in which death was not due to typhoid fever, or its sequelæ, are included. In only seven of the fatal cases do the reports show that the proper treatment was instituted on or before the eighth day of the disease. In the case of 4935 patients who recovered, and in whom the duration of illness was given, it was 12.7 days.

The Minute Anatomy of Intussusception.—POWER (*Jour. of Path. and Bact.*, June, 1897) contributes a most interesting report upon the minute anatomy of intussusception based upon an examination of thirty-one specimens. Some of these were very old, but were so well preserved as to be excellently fitted for microscopic examination. One of them, taken from the cecum of a child, is of especial interest, as it was shown by John Hunter to a medical society in the year 1789.

From the examination of these specimens it is clear that any part of the intestinal wall may be affected, though the stress of the infection falls most often upon the submucous tissue and upon the circular layer of muscle. The mucous membrane may also be seriously injured. The amount of extravasated blood as well as its seat varies greatly. The extravasation is followed by inflammatory changes, in which the submucous tissue and the circular layer of muscle are chiefly involved. These changes terminate in hyperplasia of the connective tissue, leading to sclerosis; in a tryptic digestion, leading to the disappearance of every element in the wall of the bowel, and the conversion of its connective tissue into reticulin, or in diffuse suppuration and sloughing of the inflamed bowel, which is then separated and cast off by the ordinary process of ulceration.

Bad Results Following the Use of Petrolatum.—MILLARD (*The Reporter*, June 26, 1897) mentions a number of instances in which the use of the solid products of petroleum has produced most unpleasant effects. These were usually of the nature of eczema, but ulcers and abscesses have also been met with. Since the author's attention has been directed to this subject, he has found these cases to be much commoner than is usually stated. Apparently some persons have a peculiar susceptibility to this remedy, which unfortunately is so popular that it has supplanted better bases for ointments. One of the best of these is benzoated lard, which Millard recommends in place of vaselin.

The Frequency of Contracted Pelves.—DOBBIN (*Amer. Jour. of Obstetr.*, August, 1897) calls attention to the fact that the percentage of contracted pelves among American women is probably very much greater than is usually supposed. In Germany, where it is customary to take accurate measurements, the rate of occurrence varies from

eight to twenty-four per cent. In France it has been reported as five per cent., while in America it has been given by Reynolds as 1.7 per cent. Dobbin took accurate measurements in 350 obstetric cases occurring in Baltimore, and found that 12.18 per cent. of the pelvis were contracted. About one-third of these were in negroes, the percentage among them being eighteen, while that among Americans were 7.7, and among the foreign-born women 5.5. As these figures are very close to those obtained in German and other clinics where exact measurements are taken, it is reasonable to suppose that Americans do not materially differ in this respect from European nations, but that the apparent difference is due to the lack of exact measurements in this country.

Ovariectomy in a Child Thirty-three Months Old.—HOFFMAN (*Am. Jour. of Obstetr.*, September, 1897) reports on ovariectomy performed for the removal of a cystic sarcoma in a child thirty-three months old. The tumor was discovered about five months before operation, and was at that time of considerable size. At the time of its removal it contained from three to four quarts of fluid, and a fleshy mass weighing $2\frac{1}{2}$ pounds. An ovariectomy for a tumor of this character has rarely, if ever, been performed on so young a patient. Unfortunately, death followed thirty-three hours after the operation.

Sun-Heated Sand as a Therapeutic Measure.—The value of the sand-bath has been known for many generations, but although frequently employed by the laity in one way or another, it receives at present very little professional attention. The ease with which a hot sand-bath may be carried out at most ocean resorts, and the benefit which follows its use in cases of obstinate joint affections of rheumatic, gouty, or syphilitic origin, as well as in chronic troubles of the liver, spleen, kidney, and pelvic organs, has satisfied PARKER (*Medical Times*, September, 1897) that it ought to be more frequently employed. A temperature of 120° to 130° F. is readily borne, and the best costume for the treatment is the ordinary bathing-suit. The patient should be directed to change his position and location every ten or twenty minutes, and the bath should be continued for two or three hours. Parker has also found it of value in the wasting diseases of childhood.

THERAPEUTIC NOTES.

A Harmless Cure for Obesity.—In the *Maryland Med. Journal*, June 19, 1897, CATHELL gives rules for the reduction of obesity which have been successful in his practice for many years.

"Over-fatness" is commonly due, he says, to one of the following causes: Congenitally small lungs with a defective oxygenating capacity; eating excessively of all kinds of food; want of lung-expanding exercise; using alcoholic drinks to excess.

Many of the drugs which have a known fat-reducing power exert an injurious action on the other tissues of the body, and if used persistently for any length of time, or in efficient doses become dangerous to health. While the

various obesity cures are so rigorous that few carry them out conscientiously, the treatment of the author is very simple:

The patient has only to drink after each meal a glass of the artificial Kissingen water to be found at drug-stores and soda-water fountains, and on the succeeding day, a glass of artificial Vichy water also half an hour after each meal. This is to be continued week after week until the patient comes down to a normal degree of stoutness, and the waters are then discontinued.

While taking the waters the person should keep a weekly record of his weight, always using the same scales, and wearing the same clothing, and should also, for his own satisfaction, record his chest, waist, and hip measurements. If the loss in weight exceeds two pounds a week, the amount of each water should be made smaller; and if the loss has not equalled two pounds a week, a few teaspoonfuls of lemon juice should be added to each glass of the Kissingen water to increase its acidity, and a teaspoonful of aromatic spirits of ammonia to the Vichy to increase its alkalinity. The diet should be light and contain only small amounts of fat, starch, sugar, and alcohol. Moderate out-door exercise should be included in the day's program.

The mode of action of these waters taken in the manner described, is not clear, but their efficiency is too well established to admit of doubt.

Sprains and Their Treatment.—In the *Boston Med. and Surg. Jour.*, June 17 and 24, 1897, GRAHAM emphasizes what he has called attention to before, *viz.*, the advantages to be derived from the treatment of a sprain with almost immediate massage and passive or active motion. Applied intelligently massage is allowable from the first, the presence of, or increase in the pain being the surest guide to an excessive or faulty use of this method of treatment. From study and a large and continued experience, the writer draws the following conclusions:

1. A sprain is a wrench or twist of a joint, a sudden, partial displacement of two articulating surfaces, followed by immediate replacement.

2. The symptoms are pain, swelling, discoloration, and usually heat and impaired motion.

3. Its diagnosis may be obscured by the swelling which may conceal a fracture.

4. Whatever will quickly reduce the heat, pain, and swelling—such as massage, snug bandaging, and elevated position of the joint—will proportionately make the diagnosis easier.

5. The means just mentioned are, therefore, not only valuable for diagnosis but also for treatment; and their use in many cases of sprains of all degrees of severity, show that they recover in one-third of the time required under absolute rest and fixed dressings without massage.

6. Even the sprain of a joint previously weakened by malignant disease may be rapidly ameliorated by massage.

Other articles by LOVETT and MUMFORD in the same numbers of this journal substantiate these claims, and give details of treatment.

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A COLLECTIVE INVESTIGATION OF INFANTILE SCURVY.

It will be remembered that the collective investigation of the use of antitoxin in diphtheria, which was undertaken two years ago by the American Pediatric Society, was productive of exceptionally good results, inasmuch as it added greatly to our knowledge of the action of the new therapeutic agent. This Society now proposes to make similar researches into the domain of infantile scurvy, and it is hoped that the cordial cooperation of physicians throughout the country will again be forthcoming, thus assuring the ultimate success of the investigation.

Unfortunately, this curious disease is one about which we know but little. Attention was called to it a few years ago by Cheadle and by Gee, who pointed out the fact that it is of much more frequent occurrence than is generally supposed. Subsequently, Barlow also described it at considerable length, including the *post-mortem* findings. Among the Germans, especially, it is known as "Barlow's disease," and in certain other countries as "scurvy-rickets." Its etiology is practically unknown, for although it appears to depend upon some long-continued dietetic

error, just what this may be, or in what manner it operates to produce this rather than some other affection, are matters regarding which there is no definite knowledge.

The solution of the problem is to be brought about in two ways: first, by careful chemic and physiologic study of the secretions and excretions of the body, and, second, by a collective investigation of the apparent causes, symptoms, complicating diseases, course, and treatment, combined with painstaking records of autopsies in as many instances as possible, providing the cases have been carefully observed.

YELLOW FEVER.

THE outbreak of yellow fever in Mississippi is of such serious portent to the people of the Southern States that it is a matter of sincere congratulation that the sanitary branch of the Federal government is so fully alive to the dangers of the disease and has taken decisive steps toward preventing its spread. A cordon has been established about Ocean Springs, the village in which the scourge first made its appearance, the houses have been fumigated, and, as far as possible, the streets disinfected. Representatives of the United States Marine Hospital Service are on the ground, and those already afflicted with the disease have been segregated. At the present writing eighteen cases of the disease have made their appearance at New Orleans, and although every effort is being made by the Board of Health to thoroughly clean and disinfect the city, and to impress upon the minds of all the absolute necessity of observing every sanitary precaution, the feeling of alarm is general. Other cities have declared a quarantine against the infected district, and great anxiety is felt along the entire Gulf Coast, for the reason that several hundred persons who had been at Ocean Springs, and consequently exposed to the danger of infection, left there during the few days previous to the edict of the authorities and scattered in all directions, going to Mobile, Montgomery, Jackson, and other places.

It appears that an outbreak of fever, which was declared by the local physicians to be dengue, occurred at Ocean Springs during last July. It spread rapidly, and at one time fully 600 persons, or one-fourth of the entire population, were ill with the

disease. It prevailed during the entire month of August, but was not regarded as of serious consequence until ten deaths had occurred—an unprecedented number in such an ordinarily mild disease as dengue fever. A commission of experts from New Orleans made a careful investigation, and coincided in the opinion of the character of the affection. Soon afterward the disease assumed a virulent form, and one of the examining physicians himself died, with evidence of black vomit. A second conference with experts was then called for, which resulted in the announcement that the disease undoubtedly was the much-dreaded yellow fever.

Many efforts have been made during the past few years to isolate the specific germ of yellow fever, notably by Freire of Rio Janeiro, Finlay of Havana, and Sternberg of Washington; but to Sanarelli, a young Italian residing in South America, who, during several years, studied and worked under the direction of Roux at the Pasteur Institute, Paris, undoubtedly belongs the credit of its discovery. In a lecture delivered at the University of Montevideo on June 10, 1897, a translation of which was published in the *British Medical Journal* of July 3d, he embodied the result of his investigations, and described the germ under the name of *bacillus icteroides*, as “at first sight presenting nothing morphologically characteristic. It is a little bacillus with rounded extremities, for the most part united in pairs in the culture, and in small groups in the tissues, from two to four thousandths of a millimeter in length, and, as a rule, two or three times longer than broad. It is very pleomorphic.”

Contrary to the generally accepted theory, this organism, which can be rarely demonstrated in pure culture, being associated with the coli bacillus, staphylococcus, or streptococcus, especially affects the blood and connective tissue, and is never found in the gastro-intestinal contents. “Its poison, therefore, instead of being absorbed through the intestinal walls, is manufactured in the interior of the organs and in the blood itself.” The toxin produced is an exceedingly active one, and appears to have a special action upon the parenchymatous cells of the organs of secretion. In addition, it produces degenerative changes in the gastric and intestinal mucous membrane, and in the walls of the blood-vessels, thus giving rise to the condition known as black vomit.

Sternberg, in an exceedingly interesting paper read at the Twelfth International Congress at Moscow, which was published in the *American Journal of the Medical Sciences* for September, 1897, draws a parallel between the so-called bacillus *x* of Sternberg and the bacillus *icteroides* described by Sanarelli, and calls attention to their striking similarity of action.

The present outbreak recalls vividly to mind the epidemic of 1888, when the disease made its appearance at Tampa, Fla., and quickly spread to Plant City, Manatee, Palmetto, and finally to Jacksonville. It will be remembered how subscriptions from all parts of the country poured into the stricken district, more than \$200,000 being contributed within two weeks. The epidemic was not stamped out until the middle of October, by which time there had been 4704 cases and 412 deaths. At Fernandina the record was 1200 cases and 38 deaths; at McClenney, 200 cases and 22 deaths, and at Gainesville, 100 cases and 12 deaths. At Decatur, Ala., there were 123 cases and 30 deaths, and sporadic cases occurred in other parts of the State. It would seem from this record that about ten per cent. of yellow fever cases are fatal in the Southern States.

The origin of the disease in this country has always been directly traced to importation from abroad. The epidemic which raged at Pensacola during 1873 and 1874 was introduced from Havana, as was that which decimated Fernandina in 1877 and Jacksonville in 1888. The present outbreak undoubtedly will be traced to a similar cause.

In a paper on “The Pathological Anatomy of Yellow Fever,” read at the First Pan-American Medical Congress, Washington, D. C., in 1893, by Dr. Joseph Jones of New Orleans, the statement is made that in the United States the disease is limited to certain months of the year, and never prevails during the winter. The great epidemics, notably those of 1847, 1849, 1853, 1854, 1855, 1858, 1867, and 1878, commenced early in the hot months (May, June, and July), and obtained their maximum intensity during August and September. Thus, during the period of thirty-two years the deaths from yellow fever in New Orleans were as follows: January, 6; February, 0; March, 2; April, 0; May, 5; June, 49; July, 2248; August, 10,639; September, 11,346; October, 5714; November, 1777; December, 119. The curve of the disease, therefore, corresponds, to

a certain extent, with the curve of temperature. Unfortunately, the prevailing weather throughout the South during the past week has been warm and rainy—ideal conditions for the development of fever—and the advent of colder weather in the vicinity of the Gulf is hardly to be expected until the end of October.

Dr. F. Peyre Porcher of Charleston, S. C., in a paper, entitled "Yellow Fever; Its Pathology and Treatment," also read at this Congress, claimed that "in fair cases and temperate individuals, treated early, there is no need for any violent third stage, for any black vomit, albuminuria, or suppression of the urine." He says, furthermore: "It is a mistake to suppose that yellow fever is necessarily a fatal malady, that epidemics vary greatly in malignity, and that we must fold our hands supinely. Belot, of Havana, claims that 95 out of 100 fair cases seen early may be cured, and I fully agree with him."

This author, as a result of large experience, recommends the following treatment: The head, hands, and arms of the patient should be sponged assiduously with ice-cold water at the very commencement of the attack, this being repeated whenever the temperature shows a tendency to rise. Twenty grains of calomel and 25 grains of quinin should be administered at once, followed, after an interval, by sulphate of magnesia. Mustard plasters should be applied to the entire abdomen, and mustard foot-baths given frequently. After the saline has acted, a dessertspoonful every two or three hours of the following mixture should be given:

Potassii acetatis	3 i-ii
Potassii citratis	3 i
Morphiæ sulph.	gr. i
Aquæ	℥ vi.

He claims that no other treatment is necessary, but suggests that a few drops of tincture of aconite added to the mixture might prove of service.

ECHOES AND NEWS.

Congress of Hygiene and Demography.—The Ninth International Congress of Hygiene and Demography will be held at Madrid from the 10th to the 17th of April of next year.

American Academy of Railway Surgeons.—The next regular annual meeting of the American Academy of Railway Surgeons will be held at Chicago, October 6, 7, and 8, 1897.

The American Electro-Therapeutic Association.—The next meeting of this Association will occur at Harrisburg, Pa., September 21, 22, and 23, 1897. An interesting program has been provided.

Floating Hospitals for Japan.—According to the *British Medical Journal*, the Japan Red Cross Society is about to build two vessels of 2600 tons each for the use of patients in time of war.

Tonsorial Asepsis.—An enterprising barber in Baltimore is to conduct an aseptic barber-shop, in which the barbers' arms will be bare to the elbow and all the tools will have frequent aseptic baths.

Honor for Sanarelli.—The news comes from Rome that a memorial tablet is to be placed on the walls of the Siennese University to commemorate the discovery of the yellow-fever germ by its pupil, Giuseppe Sanarelli.

A Hospital for Epileptics at Moscow.—A number of wealthy merchants of Moscow propose to endow an infirmary for epileptics and the weak-minded of both sexes in commemoration of the International Congress recently held there.

Precautions against Yellow Fever.—As precautionary measures against yellow fever, it is said that South Americans usually recommend four things: Avoidance of bananas, mangoes, and other fruits; avoidance of whisky and other strong liquors; scant exposure to the night air, and all the quinin pills one can swallow.

A Patient Fined for Leaving a Hospital.—A man was fined recently in London for leaving a hospital without permission while suffering from typhoid fever. He had been a patient in the institution for some time, and was convalescent, but it was held that he endangered the lives of other persons by leaving before it was considered safe for him to do so.

Doctors in Argentina.—In Buenos Ayres there are 805 practitioners of medicine—a proportion of 1 to something less than 1000 inhabitants. The number of students of medicine has doubled during the last ten years, and it has been proposed that the medical schools be closed for five years, in order to prevent overcrowding of the ranks of the profession.

Meeting of the Tri-State Medical Society.—The ninth annual meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee will be held in the Senate chamber at Nashville, Tenn., October 12, 13, and 14, 1897. Dr. W. F. Westmoreland of Atlanta, Ga., is president, and Dr. F. Tester Smith of Chattanooga, Tenn., is secretary of the Society. Dr. W. D. Haggard, Jr., of Nashville has been appointed chairman of the Committee of Arrangements.

A New Form of Insurance.—In this column last week was noted the offer by a landlord of a premium for the appearance of twins and triplets among his tenants. That these events are not regarded by all with the same high appreciation is made evident by a letter received by the

New York State Superintendent of Insurance. In this communication a certain enterprising insurance man enquires if it would be legal to form a benefit society, to insure women against childbirth, death by childbirth, twins or triplets.

Lustig's Antibubonic Serum.—Professor Lustig, Dr. Malenchini, and Dr. Galeotti, the bacteriologists sent by the Italian Government to Bombay to investigate the merits of the former's prophylactic serum against the bubonic plague, have returned, and report themselves satisfied with the results of their mission. The Lustig serum differs from that of Yersin in that it is curative as well as preventive, and is much more easily prepared. It is absolutely free from bacteria, and no bad results have been reported from its use.

Oxygen in the Treatment of Chronic Ulcers.—A method has been suggested by Dr. George Stoker of London, by which he believes chronic ulcers and delayed repair in the tissues may be stimulated by the direct application of nascent oxygen. His reasoning has induced the British Government to purchase twenty complete equipments for the production of the necessary gas for use in Monibasa (Uganda) upon the workmen employed in building the military railroad, many of whom are incapacitated by chronic ulcers of the leg.

Winter Recreation Piers in New York.—It has occurred to the architect who drew the plans for certain of the recreation piers which, by order of the New York Dock Board, are now in course of construction, that by providing glass sides and a heating apparatus at a small additional expense the piers might be made available during the winter as well as the summer. The idea is truly a capital one, and should receive serious consideration. With the flowers and plants already in possession of the city it would easily be possible to convert the piers into winter-gardens of great beauty.

Anticholeraic Serum.—On behalf of Dr. Ferran of Barcelona, M. Gautier has laid before the Academy of Medicine, Paris, a claim of priority in connection with the treatment of cholera by anticholeraic inoculations. Dr. Ferran's method of treatment dates back to 1885, at which time a commission of French medical men visited him for the purpose of investigating it. He refused, however, to give the formula of his vaccine, and still persists in this refusal. Under these circumstances the Academy has declared that it can neither give any decision as to the curative virtues of a preparation of which it knows nothing, nor give support to his claim for priority.

American Medical Students in Germany.—The report comes from Berlin that the governments of Prussia and all the other German States having universities have altered the conditions under which medical students in the future will be admitted to the clinics. Under the new rules many Americans will be barred, and the Board of Physicians of Berlin and Brandenburg has asked the Government to draw the lines still closer, so as not to admit students from the average American medical school unless they

pass a preliminary examination. Mr. Andrew D. White, the United States Ambassador, has been notified by the American students in Berlin of these new developments, and he is inquiring into the matter.

Essays and Addresses of Sir J. Russell Reynolds.—The friends of the late Dr. Reynolds have done well in perpetuating the memory of the great London physician by publishing his essays and addresses in book form. Although for more than forty years he occupied the same residence, and steadfastly confined himself to the daily performance of professional duties, at the same time he unerringly won his way to every English heart, and by his pen placed himself in helpful sympathy with his professional brethren in every quarter of the globe. These essays present the progressive unfolding of his rich life, for he was in every sense a man of progress. Such a monument to his memory is in perfect keeping with his well-known literary taste.

Obituary.—John Braxton Hicks, M.D., London, F.R.C.P., F.R.S. This eminent obstetrician and gynecologist died on August 28th, at his residence in Lymington, England. He was a son of Mr. Edward Hicks, M.P., and was seventy-two years of age at the time of his death. He studied medicine at Guy's Hospital, and was for many years connected with that institution, having been appointed Assistant Obstetric Physician in 1865, Obstetric Physician in 1870, and Consulting Obstetric Physician in 1882. He retired from active practice about three years ago. Braxton Hicks played a prominent part in the history of obstetrics and gynecology in Great Britain, and his writings on these subjects have become classic. He was an Honorary Fellow of the Royal Society, of the Obstetric Societies of Edinburgh, Berlin, and Philadelphia, and of the American Gynecological Society.

Russian Antipathy for Jews.—It will be remembered that when the time arrived for the foreign delegates and visitors to the recent International Medical Congress at Moscow to arrange their plans for the journey it was discovered that Hebrews are excluded by law from Russian territory. Although the Government removed this impediment, its royal ukase could not so readily dislodge the personal prejudice from the minds of the people, and in spite of the more than regal hospitality met with on all sides this unmastered racial antipathy cropped out at least once during the meeting, the occasion being a dinner given in honor of the Congress, when a heated discussion arose between one of the Russian members and a prominent German professor, and unnecessary personalities were indulged in. The affair resulted in considerable hard feeling and it was only by the intervention of friends of both parties to the discussion that amicable relations were restored.

A False Charge Against Johns Hopkins Hospital.—During the past week a London daily newspaper sharply criticized a report which appeared in the July number of the *Johns Hopkins Hospital Bulletin* relative to certain experiments which had been made in the treatment of the insane with preparations of the thyroid gland. Accord-

ing to the London journal, one patient was reported to have died as a result of the treatment, and the comment is made that such procedures in England would quickly end in the halting of the experimenters before a court of law to answer for the patient's death. In reply, Dr. Berkley, who wrote the report, states that the brief tests made were upon insane persons not in any way connected with Johns Hopkins Hospital, and that, although they demonstrated the toxic properties of the thyroid extracts, they did not hasten the fatal termination in the case of the only patient who died, as death was due to acute miliary tuberculosis nearly two months subsequent to the date of the experiments. The employment of the thyroid gland in cases of melancholia and dementia had been suggested by the mental improvement resulting from its use in cretinism. The method is not a new one, as it has been experimented with by English therapeutists.

CORRESPONDENCE.

A CORRECTION.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In THE MEDICAL NEWS of August 21st, a report of a discussion of Dr. Potter's paper on Eclampsia, read at the recent Niagara-Falls meeting of the American Association of Obstetricians and Gynecologists, is at fault in stating that I referred in figures to the excretion of urea. What I did mention, however, was the amount of total urinary solids—a quite different matter.

I said nothing about Paget, but I did emphasize the very valuable work of Etheridge in applying Haine's modification of Häser's process for estimating the total urinary solids per diem, claiming that it was more easily applied than the Doremus test for urea, and quite as valuable as an early sign of renal inadequacy.

CHARLES STOVER, M.D.

AMSTERDAM, N. Y., August 26, 1897.

THE HAHNEMANN MEDICAL SCHOOL OF CALIFORNIA ASKS AFFILIATION WITH THE CALIFORNIA STATE UNIVERSITY.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: At the last meeting of the Regents of the University of California, a petition from the Hahnemann Medical School asking for affiliation with the State institution was presented. At the same time a counter-petition was offered by the members of the regular profession, comprising the Faculty of the Medical Department. The subject was postponed by the Regents until the date of their next monthly meeting, September 7th. We think that the proposed measure will be defeated, but no one can foretell the result of the final vote cast by laymen who are not thoroughly posted about medical matters. To save our University from the ignominy cast on those of Michigan and Iowa, we are using every effort to prevent the favorable acceptance of the petition.

In the petition appears the following, which seems to be the only claim deserving of consideration: "As the patrons of homeopathy are among the well-to-do class of

citizens and not so much among the masses as the patrons of other schools of practice, it is undoubtedly a fact that such patrons pay at least one-third of the taxes of the State."

Can you show that no such condition exists in the Eastern States? We expect to dispose of this claim effectually before next month. In our counter-petition we have clearly shown that homeopathy is dead in its birthplace, Germany, and waning elsewhere; that it is denied recognition by all of the great European universities, governments, steamships, railroads, life-insurance companies; that none of the great blessings, as vaccination, anesthesia, antiseptic surgery, etc., have come from it; that bacteriology, serum-therapy, the discoveries of the germs of disease, surgical methods and appliances, are not indebted to it in any manner.

Trusting that you may be able to serve us, as well as the entire profession, and thanking you in advance for what you may do, I am,

Yours sincerely,

CEPHAS L. BARD, M.D.

VENTURA, CAL., August 15, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE OPENING OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA—A NEW CLINICAL LABORATORY FOR THE MEDICO-CHIRURGICAL HOSPITAL—PHILADELPHIA COUNTY MEDICAL SOCIETY—PATHOLOGICAL SOCIETY OF PHILADELPHIA—VITAL STATISTICS FOR THE WEEK ENDING SEPTEMBER 11TH.

PHILADELPHIA, September 11, 1897.

COMPETITIVE examinations for medical scholarships at the University of Pennsylvania will be held on Saturday, September 25th, and entrance examinations for the Department of Medicine will take place on the following Monday. Owing to the largely increased number of students of medicine at the University this year, it has been found necessary to turn over to the medical school the building formerly occupied and recently vacated by the Dental Department, to meet the needs of the Medical Department of an additional building for laboratory purposes. The building has been altered and thoroughly equipped for the purposes of practical physiologic work. Another building, which will be at the disposal of the Medical Department during the coming year, will be the D. Hayes Agnew Memorial Pavilion, which constitutes one of the wings of the University Hospital. This structure has now been completed, and contains, in addition to apartments used for dispensary purposes, operating-rooms for gynecologic and orthopedic work.

A new clinical laboratory will shortly be erected by the Medico-Chirurgical Hospital on the ground adjoining the hospital, which has been recently acquired by the institution. During the past summer members of the hospital staff and of the faculty of the Medico-Chirurgical College have visited the prominent Continental and British clinical laboratories, to gather new ideas to be incorporated in their new building. It is anticipated that the

structure will be completed during the coming college year.

At a stated meeting of the Philadelphia County Medical Society, held on September 8th, Dr. Joseph Price made a presentation of specimens removed by abdominal section, and reported a series of cases of various pelvic disorders for which abdominal section was the operative procedure indicated. This paper, together with the demonstration by Dr. Price of the specimens presented, and the ensuing discussion of the topics by various members of the Society, fully occupied the time allotted to scientific business at the disposal of the evening's meeting.

A stated meeting of the Pathological Society of Philadelphia was held on September 9th. An interesting instance of endothelioma of the spinal dura was presented by Drs. S. W. Morton and A. F. Witmer. The patient, a woman of advanced years, prior to the appearance of the cord lesion, had suffered removal of the left breast for malignant disease. Following this operation, a marked projection of the twelfth thoracic vertebra was noticed, and later a train of symptoms, such as radiating pain in the right leg, obstinate constipation, bladder involvement, and many trophic disturbances set in. Shortly before the patient's death new growths in the right humerus and the left tibia were noted, and bed-sores made their appearance over the sacrum. Autopsy showed, in addition to other lesions, caries of the twelfth dorsal vertebra, and the presence of a new growth measuring 33x25x19 mm., attached to the spinal dura, and compressing to a considerable extent the substance of the cord. Upon microscopic section, the tumor was found to be an endothelioma, which was considered by the reporters to be of primary nature. Following this paper, Dr. A. A. Eshner made a communication relating to a case of uremia, presenting atypical clinical manifestations, and drew attention to the unreliability of a subnormal temperature as a symptom of the condition under discussion.

At the conclusion of Dr. Eshner's paper, nominations for officers for the ensuing year were made. For president, Dr. William E. Hughes was nominated; for vice-president, Drs. F. A. Packard, C. W. Burr, Alfred Stengel, and John Guiteras; for secretary, Dr. David Riesman; for treasurer, Dr. T. S. Westcott; for curator, Dr. J. Dutton Steele, and for recorder, Dr. W. S. Carter. The above candidates will be balloted for at the next meeting of the Society.

The number of deaths in this city for the week ending September 11, was 389, a decrease of 10 over the preceding week, and an increase of 4 from the corresponding week of last year. Of the whole number of deaths 139 were in children under five years of age. The returns of new cases of contagious diseases for the week showed a decrease of 22. There were 68 cases of diphtheria; 33 cases of scarlet fever, and 60 cases of enteric fever.

Mr. Vanderbilt Denies It.—Mr. George W. Vanderbilt denies the report that he proposes to build a hospital for consumptives at Asheville, N. C.

OUR VIENNA LETTER.

[From our Special Correspondent]

THE MEDICAL COUNCIL AND THE ATTEMPT TO REGULATE RELATIONS BETWEEN PHYSICIANS—THE VIENNA SCHOOL AND THE SUPRARENAL CAPSULES—ANATOMIC RELATIONS, DIAGNOSIS, THERAPY AND PHYSIOLOGY—EXERCISES IN HEARING FOR DEAF-MUTES AND THE HARD-OF-HEARING, AND THEIR RESULTS.

VIENNA, August 29, 1897.

OCCASIONALLY one finds in certain of the Viennese medical journals a notice somewhat to the following effect: "Dr. So-and-So, having been duly warned that he is transgressing the regulations made by the Medical Council, and having neglected to heed such warnings, members of the profession are hereby requested to have no further professional relations with him. By order of the Medical Council (Arzt Kammer)." Such notices are usually directed against physicians whose advertisements in the daily political press have been called to the attention of the Medical Council. It pronounces, as it were, a modern medical excommunication, or interdict, but from what I hear, it produces about as little effect upon the delinquent doctors as would the corresponding spiritual decrees if employed in our day. The advertising doctor goes on his way, perhaps gathering a little additional publicity from what he will not fail to point out to his patients as professional jealousy on the part of the regular physicians because of his wonderful success.

While the Arzt Kammer here is a legally constituted body for the regulation of professional relations, its decrees practically carry no more weight than do those of our medical societies in America because there is no sanction attached to them. Sometime it will be recognized that when a body of physicians decides that a doctor has by unprofessional conduct rendered himself unworthy to practice his profession, then the public will have a right to demand that such a man shall not be allowed to practice. Meantime, however, the work of swindling the public goes bravely on, and quacks and advertising specialists find it almost as profitable here as in America. When there has been question of allowing more power to be given to the Medical Council the old feeling that makes the general public suspicious of doctors in general has shown itself ready to oppose any innovation which will put the public health any more directly into the doctor's hands. This curious relic of medieval feeling remains despite all that the profession has done during these last fifty years to decrease the amount of disease and eradicate epidemics, and it will remain until the realization comes that the medical profession as a body is disinterestedly engaged in the prevention of disease, notwithstanding traditional feeling to the contrary.

The Vienna school has of late interested itself a good deal in the study of the suprarenals. The pathology of these glands has been illustrated by Professor Kollisko, who has also pointed out some of their interestingly intimate relations with the circulatory and nervous systems. At one of his last pathologic demonstrations of the year, he exhibited an encephalic fetus, the so-called frog-faced infant, in whom the cerebrum was totally deficient. Be-

fore dissecting the abdomen, he remarked that the suprarenals would, almost without doubt, be lacking or, at most, only traces of them would be found. Examination of the viscera and comparison with those of a normal fetus showed that this was the case. This interesting observation, the result of a series of sections in such cases, is but another proof of the intimate relations which exist between the central nervous system and the suprarenals.

In one of the last clinics of the semester Professor Neusser discussed the possibility of diagnosing Addison's disease when the characteristic discoloration of the skin and mucous membranes is absent. While it is an extremely difficult problem, Neusser does not consider it impossible. Several interesting cases, which have come to autopsy during the past year, though with lesions of the suprarenals, and without the pigmentary deposits, seem to indicate the points on which the diagnosis can be based. The last one which occurred was a characteristic one and may be taken as a type. A comparatively young man was brought to the hospital in a state of coma. There was no edema and no signs of any ever having existed, but there was an extremely high-tension pulse and thickened arteries. There was no albumin and no casts in his urine. He died without coming out of his lethargy, and the only clinical diagnosis that seemed possible to make was that of Bright's disease. The autopsy showed extensive degeneration of the suprarenals. The changes in the arteries were such as are often found in Addison's disease, and such as Kollisko considers as due to the effect upon the vascular system of the absence of the secretion of the suprarenals in the organism and the consequent interference through the sympathetic with the peripheral vasomotor mechanism. It is on these changes in the arterial system with the high-tension pulse, or a very striking difference in tension between the peripheral pulse and that in the abdominal aorta, for instance, when other causes may be excluded, that a diagnosis of Addison's disease may be made even in the absence of characteristic pigmentation.

From a therapeutic standpoint, suprarenal extract has met with some favor here, internally and locally. It seems to have caused a distinct amelioration of the symptoms in at least one case of Addison's disease within the last few months, and when applied locally has been found to act as a good hemostatic preparation. Its power of contracting the peripheral vessels is such that it produces very satisfactory local anesthesia, and one reporter considers it better than cocain for this purpose in operations upon the nose. Its use is not followed by the great reactive relaxation of blood-vessels which occurs after the use of cocain, and which so often gives rise to troublesome bleeding.

Dr. Arthur Biedl, Professor Stricker's assistant in the Department of Experimental Pathology, has been studying the secretion of the suprarenals as it occurs in the circulation. He thinks that he has demonstrated that the splanchnics carry vasodilator and secretory fibers to these glands. He has studied especially the venous blood coming from them, and has observed that after irritation of the splanchnic nerves in the thorax the number of minute

granules of protoplasm in the blood coming from the glands are diminished. These granular masses have long been thought to have their origin in the suprarenal capsules, though no definite proof could be advanced. The number of leucocytes in the venous blood is also diminished, and Biedl suggests that, owing to widening of the blood-paths and decrease of function in the glands, they are retained. This part of the subject is of striking interest, because the clinician and the therapist have so far outstripped the physiologist in the acquisition of knowledge of the suprarenals that additions to the physiology are welcome as affording a solid basis for scientific work in a matter which is otherwise liable to drift into the veriest empiricism.

One of the features of the study of ear diseases in Vienna (and where has more been done for the specialty than in Vienna?) is Professor Urbantschitsch's exercises in hearing for deaf-mutes or for those who have acquired deafness. The words seem almost a contradiction in terms, but the exercises are a very practical mechanic method of bringing out powers of hearing which were so latent that they were thought to be absent. For the outer world, Urbantschitsch's name is so overshadowed by those of his two great Vienna colleagues in ear diseases, Gruber and Politzer, that it is quite unfamiliar. To his colleagues here, how much he is one may judge from his recent election to the presidency of the Austrian Association of Otolologists. His success with the methodification of hearing-exercises will yet make him well and widely known.

The idea of hearing-exercises for the deaf is not a new one, but its practical systematic application has only shown in recent years how much it may accomplish. The deaf are usually not completely without hearing, but never having heard sounds because always uttered in the usual tone of voice, have never learned to distinguish them. If, however, sounds are uttered in a very loud tone close to their ears they learn to catch them, and after a time to distinguish between different sounds. After a certain amount of such exercises, the sounds need not be uttered in so loud a tone, yet they are heard. Just why it should be so is a question which divides the otologists, but it would seem that even a minimum amount of nerve conduction becomes by practice more used to produce the reflexes necessary for the completion of a function. Whatever the explanation may be, after a few weeks, though sometimes it takes months of patient exercises (not for longer than five-minute intervals, for it is very tiresome, but frequently during the day), patients improve wonderfully in their hearing powers. Absolutely deaf-mutes learn to catch words uttered just above the ordinary tone of voice. After a few exercises the noises in the street easily become distinguishable and the dangers of street crossing greatly decreased. Deaf-mutes who could only catch expressions by lip-reading, but who found it difficult to obtain positions in business because of the inconveniences attached to this method, have learned in the course of six or eight weeks to hear enough for certain business purposes.

In a large proportion of the cases of deaf-mutism no nervous or aural lesion can be demonstrated *post-mortem*

to account for the condition. It is probable that it is in many cases due to a congenital paucity of auditory nerve-fibers rather than an absolute absence of any important nervous element that constitutes the etiology of the condition. Under these circumstances, the advisability of training the hypoplastic nervous elements to their highest possible functional capability, and the probability that such training will be followed by distinct improvement of function seems clear. Meantime, it is a step forward distinctly in line with much that is best in modern therapeutics—the use of even Nature's weakened forces to the best possible advantage.

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

[From our Special Correspondent.]

MOSCOW, August 23, 1897.

THE second general session of the Congress was extremely interesting. Professor Krafft-Ebing's discourse was a very able one and some of its material strikingly new. His subject was "The Etiology of General Paralysis," and his argument was as near a demonstration of its syphilitic origin as it is possible to have in the inductive sciences. He adds two things to what has been said so far on the subject. All statistics collected with any care during recent years have shown that in a large proportion of the cases there was syphilis in the history of patients suffering from progressive paralysis. Krafft-Ebing's own statistics show about sixty per cent. of syphilitics among his general paralytics during ten years. There remained always, in all statistics, however, a notable number of cases without any syphilis in the history. Krafft-Ebing's assistant in Vienna during last winter went to the clinic of Professor Lang, and obtained the histories of the patients suffering from what were undoubted tertiary lesions of syphilis. He found that there was a larger percentage of cases of general paralysis among those patients in whom not the slightest syphilitic history was obtainable than among the general paralytics in Professor Krafft-Ebing's service. One of the great objections which has been made to the theory of the syphilitic origin of general paralysis and tabes would seem to go down before these striking statistics. It is possible then for patients to have had syphilis and yet know nothing of it, at least in as large a proportion of cases as those in which a syphilitic history is wanting in general paralysis.

After Krafft-Ebing came Dr. N. Senn of Chicago who read a paper on "The Classification and Surgical Treatment of Acute Peritonitis." His discourse was a masterly review, and I am sure that the Americans present were proud to think that we were so well represented. The work of American surgeons has entitled them to teach the medical world something on the subject of acute peritonitis, especially the acute septic form, to which part of his subject Dr. Senn limited himself in his address, and the ripe experience of our great surgeon, gathered not alone from personal observations but from contact with brother American surgeons, stood out clearly and magnificently.

Professor Metchnikoff in a paper, entitled "The Pest,"

explained the reason for the failure of plague-serums to fulfil expectations in India after the wonderful success that had been reported from its use in China. When it was resolved to manufacture large quantities of the serum for India, a very difficult question presented itself at the Pasteur Institute in Paris. Up to that time the serum had been obtained from one immunized animal, but now it became necessary to inoculate at least thirty horses with the plague in order to obtain the serum. This could not be done at the Institute itself, but would have had to be carried out in one of the suburbs. The slightest error of the attendants in handling the virulent cultures, and there necessarily was a number of them, would perhaps precipitate an epidemic of plague in Paris itself. Professor Roux, taking this into consideration and knowing from experience in the manufacture of other serums that dead cultures often act almost as well in producing immunization, resolved to employ these cultures. As is clear from the issue this was a serious error. The dead cultures produced a reaction in the animals and a protective serum was obtained, but as events showed, it was an extremely weak one. It was this serum which was shipped to Yersin and employed by him in India. The death-rate in China from twenty-eight virulent cases treated had been about seven per cent.; that in India with this serum was forty-seven per cent. According to the statistics of some observers, this is about the normal mortality of the plague. Yersin, however, who collected statistics very carefully in the hospitals, found that the death-rate from genuine plague was eighty-five per cent. In epidemics numbers of other diseases—pneumonia, typhoid, etc.,—are confounded with plague and treated in the hospitals and so lower the death-rate. Yersin's statistics are the results of bacteriologic examination, the only absolutely diagnostic method in many cases, and they have been confirmed by the Russian Government Plague Commission.

The use of the serums lowered the death-rate by nearly one-half, but Yersin realized very soon how different the agent was from that which he had used in China. He began the manufacture of serum from living cultures himself. But he had only gotten his laboratory in working order and had gone to a distance to continue his studies in the pathology and therapeutics of the disease when the veterinarian whom he had left in charge was carried off by pernicious malaria. The assistants at the laboratory had not as yet been sufficiently drilled in their work, and so the quality of the serum suffered a second time. However, at the Pasteur Institute they have now produced an extremely strong serum, and there is no doubt that it will do the work claimed for it therapeutically. It is not alone curative, but is vaccinal in its properties; that is, it produces temporary passive immunity from the disease. The latter property will be especially useful for the protection of countries in which passengers from infected places land. An immunizing vaccination with the serum will assure the non-conveyance of contagion. The principle of the serum, according to Metchnikoff, is much better than that of Hoffkin, who uses heated virulent cultures. There is always a certain amount of

organic reaction to this, which never occurs with the serum and there is an element of danger attached to its use.

Professor Robert of Barcelona treated us to an extremely scholarly address on "The Characteristics of Human Pathology in its Relations to Therapeutics." While completely conceding that the cell is the unit of life, he insisted that man is much more than an aggregation of cells; he is a composite whole and must be so treated. He is much more even than a composite of organs, any one of which may become diseased and need special treatment. Here is the danger in modern therapeutics from specialism without just recognition of the interaction of all the parts. There are three grand indications of therapeutics essentially connected with the pathology and physiology of man whose pointings must ever be followed: (1) Support cellular energies and encourage proper cellular nutrition, which is accomplished best by (2) regulation of all the organs so that the functions of nutrition are properly carried out; (3) support of the nervous system on whose functional coordination depends so much of internal regulation. Causal therapeutics may have its dangers because of interference in the effort to remove the cause by Nature's own protective effort. It is the assistance of Nature's effort that now, more than ever, is on the therapeutic horizon in triumphant serum-therapy.

SOCIETY PROCEEDINGS.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-fifth Annual Meeting, Held at Montreal, August 31 to September 3, 1897.

[Special Report to THE MEDICAL NEWS.]

SECTION IN GENERAL MEDICINE.

THIRD DAY—SEPTEMBER 3D.

CHOLELITHIASIS; ITS CAUSATION, SYMPTOMATOLOGY, DIAGNOSIS, AND TREATMENT.

DR. WILLIAM HUNTER of London, England, opened the discussion. He said that seven per cent. of all recorded *post-mortem* examinations have revealed the existence of biliary calculi—a fact which of itself emphasizes the importance of the subject. Until within the last four or five years medical science has, during fifty years, contributed but little that is new in the study of the etiology of cholelithiasis. His statements on this occasion would but have the weight of his own authority, as he purposed simply giving the results of his own investigations upon the subject, particularly in the course of the past two years. He found gall-stones practically to consist of only two constituents, *viz.*, cholesterin and bilirubin-cassium. A stone may be composed of either or both of these constituents. If a compound of both, the cholesterin will be found to constitute the outer layers, the bilirubin-cassium forming the nucleus.

Cholesterin is formed from the degeneration of liver-cells, especially that of mucous epithelium. It is found in limited quantity in other pathologic products of mucous

membranes, as in the sputum of chronic bronchitis and phthisis, while in pus it exists in as large a proportion as in bile itself, *e.g.*, seven per cent. This substance may be deposited in crystalline form with the aid of acetic acid. It is invariably present in degenerated epithelial cells of the hepatic ducts.

Whenever inflammatory action in the hepatic ducts is attended by the formation of free albumen, the action of the latter product upon degenerated hepatic cells gives rise to bilirubin-cassium. Cholelithiasis, then, is of local, and not general, origin. Anything which causes stagnation of bile, and consequent catarrhal inflammation, will tend to its formation. Among such causes may be mentioned extraneous pressure upon the bile-ducts interfering with the flow of the bile, such as might be caused by tight lacing and pregnancy. The potency of these two causes may, in part, account for the fact that the disease occurs five times as frequently among women as men.

The bacillus coli communis has so frequently been found associated with gall-stones that it would appear to bear a causative relation to its existence. Typhoid organisms have also been found in gall-bladders containing calculi. The question of the relation of infection to formation of stone is worthy of further investigation. Welch, in 1891, found typhoid bacilli in the gall-bladder three months after injection of that organism.

The formation of stone in the intrahepatic ducts is explained as due to the excretion of irritating substances by the hepatic cells. Only one known artificial product will excite a direct catarrh of the bile-ducts, *viz.*, toluenediamin, an agent with which a most violent inflammation of these ducts may be set up at will.

The low pressure in the bile-ducts, gall-bladder, cystic and common ducts affords but little force for the expulsion of inflammatory products (inspissated bile), and, in addition, the dependent position of the gall-bladder necessitates the emptying of its contents against the force of gravity. These conditions beget a natural tendency to the retention of the contents of the gall-bladder.

The indications for treatment are simple. Regulate excretion of bile by flushing the bile passages with abundance of water. Avoid too long fasting, as food stimulates excretion. In cases of infected bile the writer knew of no drug equal to salicylate of soda as a biliary antiseptic. There can be no hope of effecting solution of concretions, as olive oil, the only agent possessing this power, cannot by any physiologic means be conveyed to the seat of the disease.

DR. J. E. GRAHAM of Toronto continued the discussion, dealing chiefly with the symptomatology and diagnosis. Cases might be classified as (1) those without jaundice and (2) those with jaundice. In the former cases the symptoms are often very obscure, and an examination of the urine for the presence of bilirubin may prove helpful. There will be no colic unless the cystic or common duct is occluded. The seat of pain is so variable that the writer on more than one occasion mistook biliary colic for appendicitis. Elevation of temperature may exist without suppuration. He believed that biliary colic sometimes exists without the presence of calculi. The differentiation

of a distended gall-bladder from a movable kidney is often well-nigh impossible. Cirrhosis of the liver, suppuration, and abscess are frequent sequelæ of cholelithiasis. Malignant disease and diabetes are so frequently associated with this affection as to point to the probability of some causal relation.

DR. OSLER of Baltimore said he believed that typhoid infection is a much more common cause of cholelithiasis than is commonly supposed. It has been demonstrated experimentally that typhoid bacilli may be present in the system without causing typhoid fever, and in many such cases it is the undoubted cause of cholelithiasis. He believed cases of biliary colic without calculi are due to attacks caused by infective organisms, usually the bacilli coli communis or typhoid bacilli.

DR. HANDFORD of Nottingham, England, although practising in a district where typhoid is endemic, treating as many as 300 cases in private practice during a single year, has never found cholelithiasis as a sequel of a single case, and the claims as to their causal relation is something entirely new to him. He has found gall-stones in young patients much more frequently than the statistics of many writers would appear to indicate is usual. He also believes in the existence of biliary colic without stone.

DR. JOHN A. MULLIN of Hamilton, Ont., in a rather extensive experience with typhoid fever, has never found cholelithiasis to follow that disease in a single instance.

DR. BAUMGARTEN of St. Louis referred to the frequent association of cholelithiasis and malignancy, and thought in such cases that the latter is the cause of the former, although his observations have led him to believe that this etiologic order is sometimes reversed.

DR. PASTEUR of Montreal cited a case in which the surgeon could find no gall-stone, and yet the patient speedily recovered after the operation.

DR. RUERS of Denver, Col., related the history of a case in which no stone could be found, but in which the *post-mortem* examination disclosed obstruction of the small intestine from an impacted gall-stone.

DR. ACHESON of Galt, Ont., asked Dr. Hunter whether, in his opinion, the use of lime-water in limestone districts had any part in the formation of gall-stone.

DR. HUNTER, in closing the discussion, replied that he believed the causes to be local, and that the drinking of lime-water, or any other general constitutional cause, cannot have any direct part in the formation of biliary calculi.

THE EMPYEMA OF PNEUMONIA

was the subject of a paper read by DR. ANGUS MCKINNON of Guelph, Ont. He stated that he believed empyema to be a more frequent sequel of pneumonia than of pleurisy; in fact, he was of the opinion that empyema is very frequently concurrent with the pneumonia. So-called cases of abscess or gangrene of the lung in reality are cases of empyema. He urged the importance of examining critically for empyema every case of pneumonia which does not undergo resolution in the usual time. A continued cough and fever after pneumonia is significant, and its import should not be overlooked. He advised early testing with the aspirating-needle. Aspiration may

suffice in the early stage, but, later, opening the pleura and drainage must be resorted to. Free perspiration is another suspicious symptom of the formation of pus in the pleural cavity. The treatment is entirely surgical.

SOME OF THE MEDICAL USES OF THE ROENTGEN RAYS

was the subject of a most interesting paper by DR. F. H. WILLIAMS of Boston. He has employed the fluoroscope for diagnosis of chest diseases in some 500 cases. He showed by diagrams the differences which he has noted in health and in several chest diseases, in the position of the diaphragm line in inspiration and expiration; also, the differentiation of diseased conditions from the shadows varying in intensity, which he procured by diseased organs. He has employed the fluoroscope most successfully in the examination of cases of tuberculosis, emphysema, pleurisy, pneumo- and pyothorax, cardiac, and other diseases, obtaining in many cases information at a stage when physical examination gave only negative results. He has found no untoward effects in any of his cases from the use of the rays, and believes with due care and avoidance of too long exposures that this method of examination is entirely free from any danger whatever.

THE PRESIDENT congratulated Dr. Williams upon his paper, and the brilliant results of his work, and expressed the belief that there is a great future in store for his method of investigation. He was glad to see that Dr. Williams has succeeded in utilizing the X-rays in the domain of medicine, its use hitherto having been confined to surgical conditions.

DR. C. L. GREENE of St. Paul, Minn., read a paper on the feasibility of controlling pernicious vomiting by intubation of the larynx with a modified tube. The tube is of the ordinary form, with a linear opening in its upper part for the admission of air. Dr. Greene cited his experience with its use, and only asked that his claims made for the device be substantiated by a fair trial.

A hearty vote of thanks to the Chairman closed the meeting.

SECTION IN SURGERY.

THIRD DAY—SEPTEMBER 3D.

DR. F. J. SHEPHERD of Montreal reported a case of abdominal fibrosarcoma growing from the mesentery of the small intestine in a man aged thirty years. Owing to the extent of mesentery involved, it was necessary to remove eight feet of small intestine, three feet because of its intimate relation with the tumor, and the remainder because its blood supply was cut off by the removal of the growth. The lower cut end of intestine was six inches from the ileocecal valve. Union was established by an end-to-end suture.

The patient was much depressed by the operation, but made a complete recovery. At first there was occasional attacks of diarrhea, but later the stools became normal. The tumor weighed thirteen pounds.

DR. T. MUNIZ of Mexico discussed

THE DIAGNOSIS AND TREATMENT OF PENETRATING WOUNDS OF THE ABDOMINAL CAVITY.

DR. B. F. CURTIS of New York read a paper report-

ing a case of partial resection of the mucous membrane of the bladder for ulceration caused by the eggs of distomatohematobium (Bilharz). The patient was twenty-nine years of age, and eight years previously had served in the British army at Cairo. For two years he had had hematuria and had been suffering intensely for three weeks with vesical irritation in addition. He was anemic and exhausted. Suprapubic cystotomy revealed an area about the right ureteral orifice $1\frac{1}{2}$ inches in diameter which was the seat of a nodular infiltration with some ulceration closely resembling a sarcoma. The diseased area was excised, the ureter being slit upward to guard against contraction. The patient made an ideal recovery and was discharged cured in thirty-eight days. The correct diagnosis was not made until the tissue removed was examined microscopically, on account of the great rarity of the disease in North America. The patient has had no hematuria or vesical symptoms since the operation. For two years after the operation he was troubled by attacks of blocking of the right ureter by a thick jelly-like mucus secreted in the kidney probably on account of the presence of the parasite, but they gradually became less frequent and for over a year he has enjoyed perfect health. The author recommends similar treatment for those cases of the disease which are intractable to ordinary medical and local treatment, because of the sufferings of the patient and the liability to the secondary formation of calculus or of a malignant tumor in the bladder.

DR. A. H. FERGUSON of Chicago read a paper, entitled

PERSONAL OBSERVATIONS ON THE SURGERY OF THE GALL-BLADDER AND BILE-DUCT,

mentioning a number of instructive cases. If there is an enlarged gall-bladder the perpendicular incision is preferred. The gall-bladder should be stitched to the parietal peritoneum in the *upper angle of the wound*. It is then ready to be opened. Water may be forced into it, to determine whether the common bile-duct is patulous.

DR. A. B. ATHERTON of Frederickton, N. B., reported

A CASE OF REPEATED ATTACKS OF ABDOMINAL PAIN AND VOMITING.

The patient, a boy, was finally seized with an unusually severe attack, and upon opening the abdomen, the appendix was found and removed. Through a second incision a Meckel's diverticulum, containing fecal masses, was found, and as it was twisted and half strangulated, was removed and the abdomen closed. The operator noticed that the loop to which the diverticulum was attached was drawn up into the wound with difficulty, but no great thought was given it. At autopsy, three days later, it was found that this same loop of small intestine was strangulated through an opening in the mesentery, the loop passing through from above downward, and from right to left.

DR. W. W. KEEN of Philadelphia congratulated the reader upon his bravery in reporting an unsuccessful case, as it is only by such records that others can avoid the same errors.

DR. J. LLOYD of Montreal reported

A CASE OF STONE IN THE URETER.

Such a condition may present all the symptoms of renal calculus except that there is wanting local tenderness in the loin on deep palpation. If a stone exists in the kidney, a deep, hard punch in the loin will invariably elicit the characteristic stabbing pain of renal calculus.

The symptoms of stone in the ureter are attacks of paroxysmal pain and possibly hematuria. If blocking of the ureter is continuous the kidney atrophies in a few months. If the blockage is intermittent, there follows distension of the kidney.

The uremic symptoms of abdominal distention, vomiting, and depression of the heart, with a rapid small pulse, are more marked if the stone is in the ureter than when it is in the kidney. In only one of six cases could local tenderness be elicited by pressure on the ureter. In most cases the stone is impacted in the pelvic portion of the ureter, not immediately at the mouth of the ureter, but still so low down that it can usually be felt per rectum.

If the presence of a stone is made clear it should be removed. If it is very low down it may be reached by suprapubic cystotomy. If it is higher, but still in the pelvic portion, a short abdominal incision should be made, the finger introduced, and placed upon the common iliac artery, and the ureter felt. If a stone is found the ureter can be approached outside of the peritoneum through an iliac incision, and with a little patience the ureter may be opened outside of the peritoneal cavity and the stone removed.

In women a stone in the ureter has been removed through the vagina. If the stone is high up an oblique lumbar incision is made as for stone in the kidney.

Although the ureter cannot usually be closed on account of its small size, the speaker had never had any leakage of urine through the wound in an operation of this sort.

DR. W. W. KEEN reported having opened the abdomen of a man who had had recurrent attacks of pain thought to be due to appendicitis. No appendix existed. The man recovered. Some months later a small stone was removed from the bladder, which undoubtedly while lying in the ureter had caused the previous attacks of pain.

After every attack of renal colic not followed by the passage of a stone, the bladder should be evacuated by Bigelow's instrument.

DR. A. L. SMITH of Montreal called attention to

THE FREQUENT ASSOCIATION OF APPENDICITIS WITH PUS-TUBES,

a condition which he had observed eight times. He regarded the affection of the appendix as secondary. The common method of cutting off and tying an appendix is a bad one. Frequently a fecal fistula develops some months after the patient is supposed to be entirely well. In one case there followed a pelvic abscess containing a quart of pus. Mucous surfaces will not unite. In all cases, therefore, the appendix should be cut off flush with the cecum and a Lembert suture applied.

DR. H. O. MARCY of Boston advocated peeling down the peritoneum, tying and cutting off the mucous mem-

brane, and sewing and inverting the peritoneal surfaces of the appendix.

DR. F. J. SHEPHERD objected to being told by a gynecologist how to cut off an appendix. He had tried the various complicated methods for dealing with the stump and has abandoned them all for a simple ligature and cauterization which has uniformly given him good results.

SECTION IN OBSTETRICS AND GYNECOLOGY.

THIRD DAY—SEPTEMBER 3D.

The session convened at 9:40 A.M.

In the absence of DR. J. LIPPE of St. Ambroise de Kildare, his paper on

OBLITERATION DU COL UTERIN

was read by the Secretary, Dr. Giles of London.

DR. J. F. W. ROSS of Toronto presented a paper upon THE DIAGNOSIS AND TREATMENT OF INTRAPELVIC TUBERCULAR DISEASE,

in which he dealt simply upon the early form of the disease. When a cure follows celiotomy revealing fibroid nodular disease of the peritoneum, it is impossible to say positively that the disease was tuberculosis. If death follows from secondary involvement of the lungs or other organ, the primary disease may be recognized positively as tuberculous in nature. He reported five cases, one of which revealed a tuberculous ulceration of the uterosacral ligaments without involvement of the tubes and ovaries which were not removed. Cheesy pus was found in one case in the tubes, which were undeveloped. Tuberculous disease of the tube may be mistaken for salpingitis of other origin, hysteric neuralgia and salpingalia, or for subacute peritonitis due to fibroids or other tumors. The clinical thermometer is the best means of making the diagnosis. Of the five cases reported, two were cured without treatment before the diagnosis was made. In the majority of the cases that appear in the hospitals, the disease is so far advanced that surgery offers but little chance of recovery. Early operation is advisable since it stops congestion and prevents propagation of the disease. In late cases the patient suffers from menorrhagia and metrorrhagia.

The paper of DR. T. MORE MADDEN of Dublin ON THE CONSERVATIVE TREATMENT OF FALLOPIAN-TUBE DISEASE.

was read in abstract by the Secretary. He stated that he has for many years used aspiration in the treatment of pyo- or hydrosalpinx. Successful results may thus be secured in many cases, and if the method fails, operation may be done later. The patient is anesthetized and placed in the left lateral position. The index-finger is then passed up the vagina posterior to the uterus and the tubes and ovaries are palpated, an assistant pressing the fundus downward. The position of the tumor being determined, a long fine needle is introduced into the retrovaginal fossa and carried to the most prominent part of the tumor into which it is plunged. The tap is then turned and the fluid allowed to flow out. The cavity is then washed out with an antiseptic fluid. If the tube refills, the process may be repeated.

DR. A. P. DUDLEY of New York opened the discussion on the two foregoing papers. He believes that we have become so expert in removing from women the important organs of generation that we are apt to operate unnecessarily. To what extent can we do conservative surgery on the uterine appendages with safety to the woman? If their organs are removed the uterus becomes a useless organ, and may also be removed as the gynecologists claim. This proves that the appendages are the important organs. He has seen many fat healthy ovaries removed. The French government is now offering a pension to mothers who will rear children, and thus prevent a diminution in the native population. It would be better, he thinks, if it would pension the doctor and cut off his work. Ten years ago he began his conservative work on a patient who desired to have the ovaries left. He removed from her one-half of one ovary, tapped cysts in the other, and did some necessary plastic work. In three-months' time she became pregnant, but herself induced abortion. Since then he has the records of sixty-eight such cases removing portions of the ovaries and tubes, one ovary and one tube, the ovary of one side and the tube of the other, and of these, twelve women became pregnant, and eight of them mothers. He has invaded the ovary in all directions, split it in two, removed cysts and cross-sections, and sewed the rest together. He has left only a piece as large as a pea and has yet to record one case in which inflammation has followed to a sufficient extent for detection by bimanual palpation. He has punctured the ovary with a needle through and through without bad results. He has never used Apostoli's method of electrocautery, for he thinks it unnecessary. He never uses catgut, but the finest silk and a cambric needle. He would remove tuberculous tubes and ovaries together with the uterus, because the endometrium is also generally infected. Conservative surgery upon the tube has been done as follows: He has cut the tube in two and removed one-half many times. He has washed non-fetid pus from the tube, divided the structure and replaced the tube without subsequent peritonitis; if the pus is fetid, he removes the tube. He has removed half the tube and half the ovary, and then makes an artificial fimbriated extremity by splitting up the retained end and suturing the mucous lining to the outer peritoneal surface, the cilia taking the place of the fimbria. Saving the ovary, the woman menstruates, escapes the hot flushes, and does not suffer from estranged domestic relations.

DR. BERRY HART of Edinburgh believes that conservative surgery will be done more and more. The danger is that in incomplete operations we may leave the diseased portion and have secondary trouble.

DR. SETH GORDEN of Portland believes in all that Dr. Dudley had said, and that it is only a question as to how far a man will go; but he does protest against the extreme conservatism which does not conserve the woman's health. Many of the so-called conservative operations do not restore the woman's health. Painful menstruation is not so dear to women as is supposed. If it were not for the fact that many women desire children, they would be willing to be freed from the monthly trouble. In all cases of

tubal disease, it is not conservative to leave the uterus; we will do more good when we remove all.

DR. JENKS of Detroit endorsed Dr. Dudley's stand. He has never seen bad results follow his conservative work.

DR. GILES of London remarked that the trouble in conservative surgery is the difficulty in tracing out the ultimate history of the patient, and it is only by the ultimate history that we can determine the value of the method. The primary duty of the surgeon is to retain for a patient her natural functions irrespective of her desires or likes.

DR. WILLIAM GARDNER of Montreal said that in his experience pain has been absent in tuberculosis of the pelvic organs; hence, it is not a symptom of value. The presence of pus is suggestive only but not absolute proof of tuberculosis. The gonococcus or other agent must first be excluded. We cannot place much dependence upon elevation of temperature here as in tuberculosis elsewhere.

DR. D. BERRY HART of Edinburgh read a paper, entitled

THE MORPHOLOGY OF THE VAGINA.

The urogenital sinus, he said, is now not believed to participate in the formation of the vagina. From a study of a two-months' fetus in section he found that the Wolffian bodies and ducts of Müller are formed, the latter ending blindly while the Wolffian ducts entered the urogenital sinus. At the fourteenth week important changes occur. The lower end of the sinus becomes distended to aid in the formation of the hymen. The urogenital sinus and Wolffian bulbs by coalescing form the lower third of the vagina, while the upper two-thirds only are Müllerian. The lymphatic supply of the lower third of the vagina goes with that of the external genitals. The hymen is formed by a union of the Wolffian bulbs. In marsupials the lateral canals represent the Wolffian ducts, while the center blind pouch is Müllerian. The subject, he claimed, has important practical bearings.

DR. A. LAPHORN SMITH of Montreal read a paper on the

DIAGNOSIS AND TREATMENT OF RETROVERSION OF THE UTERUS WITH FIXATION.

He believes that most of the cases of uterine displacement may be relieved by palliative measures. If the uterus is subinvolted, he treats that by amputating the cervix, curetting, etc., with treatment by glycerin tampons. If after a reasonable time these measures fail, he falls back upon pessaries. The mistake is often made of putting in pessaries when there are diseased ovaries. They should not be used in such cases. Stem pessaries are dangerous. The general condition of the patient must be considered. The round ligaments are round muscles and must be nourished. A useful treatment is exercise of the vaginal muscles by coarse wire faradism. If cases cannot be cured by such measures Alexander's operation or ventrofixation must be performed. Ventrofixation is indicated when there is retroversion with fixation or disease of the tubes and ovaries. Alexander's operation is

of service only when such complications do not exist. The results of the two operations are very satisfactory. He had done fifty-three Alexander operations and ninety-four ventrofixations with good results. There is no death-rate attached to either operation. In neither operation should we have hernia. The inguinal ring is more solid after than before Alexander's operation. In fastening the uterus to the abdominal wall, silkworm-gut thoroughly sterilized is, in his opinion, the best material to use. In ten per cent. of his cases these give rise to trouble and must be removed. He also uses fine silkworm-gut in the Alexander operation.

The paper of DR. INGLIS PARSONS of London on A NEW METHOD OF TREATMENT FOR PROLAPSE OF THE UTERUS

was read by the Secretary. The most important factor in the production of prolapse is the erect position. The treatment is to remove the organ or fasten it to the anterior abdominal wall. Another method would be to produce a limited pelvic cellulitis, and thereby fix the organ. Pelvic perimetritis must be avoided. It is only the cellular tissue around the cervix which is involved in pelvic cellulitis. Quinin is the best agent with which to produce the local irritation. It is injected subcutaneously under antiseptic precautions without anesthesia—15 minims of a solution of quinin (15 grains in one dram of water, dissolved by the aid of sulphuric acid) are injected on each side of the cervix. The needle is introduced only three-fourths of an inch, the site of the puncture being half an inch from the cervix, the needle pointing outward to avoid the uterine artery. The patients make satisfactory recoveries with but slight rise of temperature. A small slough occurs at the point of injection.

In discussing the two foregoing papers, DR. J. RIDDLE GOFFE of New York said that it was a hard subject—the dynamics of the female pelvis. What are the forces that produce the displacements, and what means have we to overcome these forces? When a woman is on her feet the displacing forces are the most effective. The illustrations in the best books give a wrong impression of the relations of the uterus to the other pelvic organs. In the erect posture the symphysis pubis is lower than the tip of the coccyx and about in the axis of gravity. The uterus then lies on its anterior face. He believes that the uterus is retained in place by ligaments and not by the perineum. Nature always adopts the plan of suspension and does not prop from behind. Even the liver and brain are suspended. The perineum is not the support of the uterus. This organ weighs $1\frac{1}{2}$ to two ounces and should be easy to hold in place. If we can retain the cervix high up in the hollow of the sacrum, the fundus will be anterior from gravity. Anteversion is so uncommon pathologically that he now no longer recognizes it as pathologic. Antelexion means a lack of development. The uterus in the fetus is slightly antelexed and remains so till puberty. Then, if health is up to par, the blood is determined to the uterus, and it gradually straightens out and becomes normal in shape. Anything which prevents this normal development will result in antelexion, as in over-cramming in school, and the improper hygiene of shop-

girls. This uterus must be stimulated to develop, and this is done by dilating the cervix and applying carbolic acid, following with a cotton tampon. This treatment must be persisted in for three months. Intra-uterine gauze produces uterine contraction, and these gymnastic exercises stimulate the growth of the uterine muscle. *Retroversion* and *retroflexion* are usually combined. He would urge the importance of preventive measures. They are almost invariably due to a lack of involution following pregnancy. The ligaments are involved as well as the uterine muscle. The majority of chronic cases are complicated by inflammation. Operative treatment through the anterior vaginal wall will give good results.

DR. MURRAY of New York believes that if good midwifery were done we would have very little uterine displacement posteriorly. Curetting and removal of the septic endometrium favor involution.

DR. GARDNER of Montreal is a strong advocate of minor measures in the treatment of displacements of the uterus, before proceeding to surgical measures. He would emphasize the importance of improved nutrition of the genital organs. There is a layer of muscle between the layers of the broad ligaments which has been called the uterine platysma (?). This requires tearing up. His limited experience in the inguinal operation has not been satisfactory.

SECTION IN PUBLIC MEDICINE.

SECOND DAY—SEPTEMBER 2D.

Before opening the session, DR. MONTIZAMBERT begged to inform the members of the exact state of affairs in regard to the smallpox "outbreak" in the city. There had been since July 2d but thirteen cases with five deaths, the remaining eight being still in the smallpox hospital with four others from a neighboring town, making twelve in all. Not a single case had occurred or was now known of in Montreal outside of the hospital, so that they believed they had the disease practically stamped out.

DR. JAMES MCLEOD of Prince Edward's Island read a paper on

THE POLLUTION OF GROUND AIR,

which was discussed by Dr. Oldwright of Toronto.

The formal discussion upon

THE UTILITY OF QUARANTINE AS NOW CONDUCTED was opened by DR. F. MONTIZAMBERT, General Superintendent of the Canadian Quarantine System. He rapidly described the Canadian system and especially the points in which it differed from that of England, the most important ones being that it includes the detention of healthy passengers arriving in infected or even suspected ships, while the English detain only those persons or ship actually infected, and the latter for the briefest possible time in which disinfection can be carried out. In fact, in England there is no "quarantine" in the strict etymologic sense of the term. This he thought might be safe for England, but certainly not for Canada. In England there are scores of ports; in Canada practically but four. In England journeys inland are very short, suspected passengers can readily be isolated if desired in one of

those much-abused compartments in the railway-cars; health officers are on guard in every town, who visit them at once upon their arrival and keep them under close observation till all possible danger is past, and isolation hospitals are everywhere available. None of these things are found in Canada with its magnificent distances and sparse population. Of course, the modern quarantine included only such detention of uninfected ships as was necessary to inspect their bills of health, and of suspected or infected ones, as was needed for the prompt isolation of cases, observation of the uninfected till past the danger period, and disinfection of the vessel and of cargo, if necessary. It had nothing whatever in common with the "forty-day" (quarantine) system of detention, except its unfortunate and misleading name.

DR. WALTER WYMAN, Surgeon-General of the Marine Hospital Service, described our American system and defended quarantine as still absolutely necessary at times, although he admitted, a necessary evil.

DR. J. A. DUNCAN, Secretary of the Board of Health of British Columbia, described the system in use against Chinese infections upon the Pacific coast. He urged that Chinese immigrants should not be received on board British or American ships in Chinese ports without a certificate of successful vaccination and a certificate of health for fourteen days past from some qualified European physician. Also that the whole Pacific coast be put under the control of a joint International Board of Health.

The subject was then thrown open for discussion.

DR. J. R. KAYE, Health Officer of West Riding of Yorkshire, said that the English system now simply consisted of thorough inspection, isolation of infected or suspicious cases, and notification of the health officers at the destinations of the other passengers, who visited them at once on their arrival and kept watch of them as long as deemed advisable, removing to isolation hospital on the appearance of any suspicious symptoms.

SIR JAMES GRANT of Ottawa spoke of the effectiveness of the Canadian system and its great importance in view of the huge shipments of food-products from Canada to Europe.

DR. MONCKTON COPEMAN of the English Local Government Board said that England had practically abandoned quarantine in 1893, and the records since had amply justified the step. The cholera record since was better than ever before in spite of the epidemic in Asia, reaching over to Germany, and the enormous traffic poured in from all the infected countries. They regard it as safer than the old method and in every other way vastly preferable to it:

DRS. REYNOLDS of Chicago, OLDWRIGHT of Toronto, and HARVEY LITTLEJOHN of Edinburgh spoke briefly.

DRS. FELIX FORMENTO of New Orleans and WOLFRED NELSON of New York (late of Panama) paid a high tribute to the services of quarantine with steam and sulphur disinfection of ships in excluding yellow fever, which had been absolutely kept out of New Orleans since 1878 solely by this means. Before that, cases occurred every year and epidemics every three or four years.

DR. BRYCE of Toronto dropped a most innocent-look-

ing little question into the English camp by asking what England was doing, or was prepared to do in her "inspection and notification" system for the examination of those swarms of emigrants from European ports who crossed from the east coast to Liverpool or Glasgow on their way to Canada. None of the English health officers appeared to want to play with the torpedo, but Dr. Bryce insisted, and after nearly everyone present had referred the question to somebody else and one official suavely suggested amid audible Canadian smiles that Dr. Bryce write to the Local Government Branch of the Circumlocution Office, which would be most happy, etc., it was pumped out somehow that they were doing nothing at all and had no idea when they would.

DR. MONCKTON COPEMAN of Hull then read a paper on

SOME ALLEGED DANGERS OF VACCINATION,

which he declared were solely due to uncleanly habits on the part of the patient, as germs could now be excluded by using glycerinized lymph.

DR. WYATT JOHNSTON of Montreal reported the admirable results of house-disinfection by formaldehyde gas, illustrated by the apparatus used.

DR. KAYE of Yorkshire read a paper on

THE RELATION OF THE HEALTH OFFICER TO THE REGISTRATION AND CERTIFICATION OF DEATHS, and Dr. Bryce commented briefly.

THIRD DAY—SEPTEMBER 3D.

The paper and discussion of the morning were by DR. GEORGE JANIN of Montreal (formerly of the *Corps des Ponts et Chaussées* of Paris) on

METHODS OF SEWAGE PURIFICATION.

He began by complimenting England upon being the first country to take legal action against the pollution of rooms by sewage, and this example had been followed fully by France and Germany, but not yet so completely as he could wish in this country. The river method was, of course, now practically condemned absolutely by all sanitarians of standing. This leaves four chief methods—separation processes, mechanic (filtration, etc.), chemic, and soil methods, of which the last was greatly to be preferred on all grounds. In this the sewage is poured out over large tracts of porous soil carefully underdrained, in intermittent flow. The land so treated becomes extremely fertile and produces such huge crops of vegetables as to defray quite a share of the expense of the process. Its advantages are, first, that it is the only absolutely sure method, the sewage being completely sterilized in passing through three feet of such soil by mechanic filtration, oxidation by ground air and above all the activity of ground-microbes. At Gennevilliers, the water running away in the escape drains may be drunk with perfect safety and even pleasure. Second, that the soil and vegetables grown upon it are absolutely free from odor or pollution of any sort and the latter will pay half the running expenses of the plant.

DR. H. LITTLEJOHN of Edinburgh agreed thoroughly

with Dr. Janin (Chanin) as to the perfection and admirable results of soil-purification, but thought the question of the expense of the necessary acreage a serious obstacle in many large towns. Certainly no other known method was so adequate.

DR. OLDWRIGHT of Toronto followed in the same strain, and DR. BRYCE related a most interesting result from an experiment with this method at the asylum at London, Ontario. It was not only completely effective both winter and summer, but the past year under cultivation by the patients, the field of three acres had produced \$1200 worth of vegetables, and they were going to double the acreage on the agricultural grounds next year.

DR. H. PROBST of Ohio endorsed the system, and said we should soon be driven to it everywhere as scarcely a river in his State was now fit for water supply.

DRS. SHRADER of Iowa and HERRICK of Cleveland expressed their appreciation of the plan.

DR. WOODS HUTCHINSON of Buffalo called attention to the fact that the chief and most essential factor in this method of purification was the life-activity of the bacteria of the soil, the nitrifying organisms. Experiment had shown that soil was deprived of two-thirds of its purifying effects simply by being sterilized, and that the "ventilation" of the soil by periods of intermission in the flow, was to enable these organisms to get their supply of oxygen. The researches of Floyd Davis had shown that the familiar "scum" which choked the ordinary sand-charcoal filter, was a mass of the mycelia of these organisms, and that such water as succeeded in passing through was absolutely sterilized. And as sanitarians had so constantly denounced bacteria in other fields, he thought it only fair for this section to "give the Devil his due" and recognize them as the chief of the bacteria family.

DR. MOULTON said that it was now proposed to pour sewage into "vat-cultures" of these organisms.

DR. LACHAPPELLE of Montreal raised the question of the drains freezing up in winter.

DR. JOHNSTON of Gloucester admitted the superiority of the method, but thought it impracticable in many places. In Gloucester they used chemic precipitation by alum and salt filtration, with good results.

DR. JANIN, in closing the discussion, said that although the first cost of the land was great, yet this was almost off-set later by the income which could be derived from the land, several European cities receiving heavy rents per acre for their sewage-fields. As to the blocking in winter, it was in active operation the year round in Dantzic, where the mean temperature was lower than in Montreal and the ground frozen a foot deeper. Break the surface ice in the ditches and the warm sewage sinks right into the soil almost as rapidly as in summer.

The next paper was by DR. J. J. MACKENZIE of Ontario upon

RESULTS FROM MECHANICAL FILTRATION IN ONTARIO,

who spoke highly of alum, which produced a very effective layer of slime upon the filter-beds.

DR. WESTBROOK, bacteriologist of the Minnesota State Board of Health, reported his investigations of

EPIDEMICS OF DIPHTHERIA IN A STATE INSTITUTION.

He found typical cultures of Loeffler's bacillus from the throats of perfectly healthy children, and in those of convalescents as long as six months after recovery. Consequently he regarded the present customary time of isolation as much too short, and that convalescents should be kept in separate rooms, if possible.

DRS. OLDRIGHT, LITTLEJOHN, and others objected to the difficulty of carrying out such suggestions, to which DR. WESTBROOK replied that that was a problem for physicians to solve, not for bacteriologists. They had enough of their own and when they had demonstrated a proposition it was for the physicians to carry it out without bothering them with objections on mere practical grounds.

The papers of DRS. SHUTTLEWORTH, HEWITT, and WOLFORD NELSON were read by title, and the section adjourned with the usual vote of thanks to the Chairman.

SECTION IN PATHOLOGY.

FIRST DAY—SEPTEMBER 1ST.

MR. W. WATSON CHEYNE of London, England, the President of the section, delivered the annual address, entitled

ON THE PROGRESS AND RESULTS OF PATHOLOGICAL WORK.

He referred to the time when he was first introduced to pathology—some twenty-five years ago, and described the condition of this branch of medicine at that period of its existence; when it consisted almost entirely of long descriptions of naked-eye appearances. In contrast, he pictured the science as it is to-day when we are so much occupied with the etiologic side of pathology, and, in his opinion, deservedly so, for, so far as practical results in the treatment of disease are concerned, the knowledge of the changes produced is of comparatively little importance as compared with the reasons underlying the existence of abnormal processes. The more accurately we can trace the etiologic factors in disease, the more likely we are to arrive at a rational method of treatment.

He spoke at length of the work of Lord Lister in the field of bacteriology, and of the many difficulties in the paths of early investigators. Lord Lister's great research on the bacterium *lactis*, in which he devised the method of fractional cultivation, was a great advance, and resulted in the separation of the bacterium which causes lactic fermentation from other organisms. This was a great step in the proof of the specificity of a particular bacterium, both as regards morphologic characters and chemical action.

Then came Koch's foundation researches on infective diseases of wounds, and the publication of his methods of straining and examining bacteria and of cultivating them on solid media. From this period the investigations have branched off in two directions: (1) Almost all infectious diseases have been studied for parasitic organisms; and (2) researches have been directed toward the tracing of the life history and functional activity of bacteria, and of ascertaining what occurs when bacteria, or their products,

are introduced into the body. From the latter has been derived Metchnikoff's work on phagocytosis.

He called attention to the fact that in spite of all that has been accomplished many problems still remain to be solved. This is particularly true of tuberculosis—for instance the remarkable results which sometimes follow free incisions into tuberculous tissues are as yet obscure. Again, what is the meaning of a chronic abscess? How is it that the tubercle bacilli at one time produce a quantity of tuberculous tissue, at another a cheesy mass, and at another, a chronic abscess? He does not accept the view that we have to do, in the latter case, with a mixed infection. In connection with pyogenic organisms there are still other problems awaiting solution.

Although the greatest advance has been in bacteriology, great progress has also been made in pathology generally. Inflammation has been further studied, but, to the speaker's mind, it has not been made any clearer. There now appears to be a tendency to regard inflammation as a natural effort at repair after an injury, though the speaker does not subscribe to this view—in spite of the able arguments adduced in its support. He considers inflammation as the mechanism which eliminates noxious agents or neutralizes their effects, and the healing process, as that which repairs defects, whether caused by injury and associated with inflammation or not.

He called attention to the fact that the advances in experimental pathology had resulted in immense benefit to the human race, a sufficient answer to the antivivisectionists. If no other practical advantage had resulted from bacteriologic work, the possibility of establishing a definite diagnosis in obscure cases is surely a gain of the utmost importance; for it permits the institution of a rational prophylaxis and treatment. The speaker places Lord Lister's discovery of aseptic and antiseptic surgery among the greatest results of experimental pathology. In conclusion he referred to the serum treatment of disease and the brilliant prospect which lies before it.

MR. ALEXIS H. THOMSON then read a paper on

EPITHELIOMA OF THE PENIS.

He referred to the penis as the commonest site of the disease, the dorsum of the glans being the most frequent. The richness of the blood supply offers considerable resistance to deep extension. Extension takes place by continuous infection, by outlying or secondary nodules, or by the lymphatics along the dorsum. This last point is important in regard to amputation by the dorsal flap. Fortunately the disease is generally confined to the region near its origin.

Professor Boyce asked if endothelioma had been seen in the same locality. Mr. Thomson could not say that it had.

THE PRESIDENT presented Professor Goldman's paper on

EARLY INFECTION OF THE BLOOD-VESSELS IN CARCINOMA AND SARCOMA.

Eosin was used in staining the vessel walls. Sections were shown of infection of the vessel wall with elevation of the endothelium by cancer-cells, going on to rupture

through the vessel wall and extension. The President said that he had seen similar appearances in sarcomata.

Dr. A. A. Kanthack's paper on

CANCER OF THE TESTICLE

was presented by DR. HUNTER. The drawings had been made by Sir James Paget. Dr. Hunter showed sections of carcinoma of the testicle, carcinomatous masses attached to the inferior vena cava, and carcinomatous masses in the lung. The tumor had been taken for enchondroma, but was shown to be columnar-celled epithelioma. The case has been accepted by Virchow as malignant enchondroma, but has now been proved to be epithelioma with cartilaginous growth about the cancer, a form recognized by Ziegler and others.

Dr. Barker asked if it could not be a teratoma, and Professor Boyce whether cartilage or cancer predominated. Dr. Hunter remarked that the main value of the specimen and paper was historic, and that he could not, in the absence of the author, answer the questions.

THE PRESIDENT read a paper by Mr. H. J. Stiles on

EVOLUTION OF CANCER BODIES,

which sought to prove that the well-known bodies are nothing but degenerative forms of cancer-cells, especially of the nucleus. Discussions have been numerous on this question. Those holding that these bodies are parasitic claim that they stain quite differently from cancer cells, and therefore are probably not cancerous. He claimed to have seen closely allied transitional forms, from the ordinary cancer cells to the cancer bodies. Sections of cancer cells were shown with a nucleus swelling and losing its chromatin. The capsule of the so-called parasite was mainly perinuclear protoplasm. The nucleolus persisting formed the nucleus of the parasite, so-called. The bodies were not endogenous cell forms. Ruffer's bodies have been seen in meningitis, and proved to be degenerated leucocytes. The sections were all from carcinoma of the breast.

Dr. Wm. H. Welch of Baltimore said he had always thought that the resemblance between cancer bodies and genuine parasites is very slight, and he had come to the same conclusion as Dr. Stiles. Besides, there is always the difficulty of explaining the dissimilarity between primary and secondary nodules.

Dr. S. E. HODENPYLE read a paper on

THE OCCURRENCE OF TYPHOID FEVER WITHOUT LESIONS OF THE SMALL INTESTINE.

Cases were cited of death from typhoid fever without lesions in the small intestine or only swelling of Peyer's patches, others with lesions in the colon only, and cases with no intestinal lesion whatsoever, the diagnosis being made by the presence of bacilli in the spleen.

Dr. Welch mentioned a case of typhoid fever without any intestinal lesions, but the bile revealed typhoid bacilli. The bacilli could probably exist in the bile for months. Dr. Hunter observed that it was interesting to learn that the bacilli had been found in the gall-bladder; a number of such cases were on record. Dr. Martin mentioned a case in the Royal Victoria Hospital, Montreal, with ex-

ceedingly slight lesions in the intestine, but with bacilli in the bile.

PROFESSOR BOYCE read Dr. Patrick Manson's paper on

FILARIA SANGUINIS HOMINIS NOCTURNA,

a new species seen in Demerara.

Dr. H. B. ANDERSON read a paper on

MULTIPLE CYSTS OF THE STOMACH AND INTESTINE.

Dr. VAN GIESSEN of New York read a paper on
HEMATOMYELOPORE IN CONNECTION WITH SYRINGOMYELIA.

He reported several cases of trauma to the spinal cord, followed by the production of tubular canals starting at the site of the trauma. These he explained as the result of hemorrhage into the cord. He recorded also one case of spontaneous hemorrhage. This was often mistaken for syringomyelia and described as a case of sudden onset. Professor Boyce questioned the hemorrhagic origin.

Dr. LEWELLYS F. BARKER of Baltimore read a paper on

CHANGES IN THE NERVE-CELLS IN EPIDEMIC CEREBROSPINAL MENINGITIS.

Degenerative changes were shown (in sections) in the anterior horn-cells in cerebrospinal meningitis very similar to cell changes seen after section of the facial nerve.

SECOND DAY—SEPTEMBER 2D.

Dr. J. G. ADAMI of Montreal introduced the discussion on

SERUM DIAGNOSIS AND THE AGGLUTINATING ACTION OF THE SERUMS,

and referred to the work done by Welch and Wyatt Johnston. He said that Grüber, in April, 1896, showed that the reaction could be obtained on the eleventh day of typhoid fever, but Widal emphasized the clinical value of it. Rouget and Metschnikoff had done work on the subject earlier.

Dr. A. S. GRUNBAUM of Liverpool spoke of the various ways of making the test, and alluded to the application of serum diagnosis in other diseases.

Dr. C. P. MARTIN presented a paper by Dr. Wyatt Johnston of Montreal explaining methods for quantitative work, and emphasizing the importance of making sure that the culture is alkaline.

Dr. J. J. MCKENZIE added some experience gained in Ontario.

Dr. JOHN H. MUSSER of Philadelphia related his clinical experience with the test, and said that the reaction had been obtained on the seventh day; blood from a case occurring ten years previously had given the reaction; cold baths had not influenced the test.

Dr. E. B. BLOCK spoke in detail of the the technic, insisting on the importance of the most scrupulous care in making the tests.

Dr. ADAMI then gave a summary of a paper by Widal, and Dr. R. W. Boyce of Liverpool stated that in Liverpool the distinction between typhus and typhoid fever had

been made by the serum method. He preferred using fluid rather than dried blood.

DR. GILMAN THOMPSON of New York summarized clinical experience in five of the largest New York hospitals. He stated that the reaction had been seen on the fourth day of typhoid fever. Attempts to distinguish between typhus and typhoid fevers by this method had failed. Of cases of typhoid fever 75 per cent. were readily diagnosed without this test, 23 per cent. of cases could not be certainly diagnosed by serum methods, and misleading results had been obtained; he therefore claimed that at present this test, like the diazo reaction, is not of great clinical value.

DR. WILLIAM H. PARK of New York then read a paper on

ISOLATION AND IDENTIFICATION OF THE BACILLUS TYPHOSUS,

showing cultures of bacillus typhosus and of bacillus coli communis. He summarized the methods of obtaining serum in New York, the moist method being preferred. He attached no value to negative results.

DR. F. F. WESTBROOK referred to the methods adopted in Minneapolis. DR. WILSON went more into details of the experience in Minneapolis, stating that acute mania and puerperal septicemia had each given genuine positive results; malaria gave negative results. Cases of typhoid fever had given positive results, but on later examinations repeatedly lost or regained their power to give positive results. DR. RICHARDSON also read a paper on the same subject.

THIRD DAY—SEPTEMBER 3D.

DR. V. A. MOORE of Ithaca, N. Y., presented a communication on

THE NATURE AND DIFFERENTIATION OF INFECTIVE SWINE DISEASES IN THE UNITED STATES.

He spoke also of the swine diseases in Europe, seeking to group the varieties under one head. Dr. W. H. Welch of Baltimore maintained that Metschnikoff's bacillus of hog cholera is not that of American hog cholera. He referred to the extreme difficulty of differentiating the pathogenic organisms in hog disease.

DR. J. G. ADAMI of Montreal read a paper on

PICTOU CATTLE DISEASE,

speaking of the methods of extension of the disease, the predisposing causes, the symptomatology, and the morbid anatomy. The liver and the lymphatic glands are the organs affected primarily. He described the micro-organism and showed cultures.

DR. MCEACHRAN said the disease had existed at Pictou for forty years.

DR. R. BOYCE read a paper on

THE TUBERCLE BACILLUS IN MILK,

and discussed the communicability of tuberculosis from lower animals to man. Tubercle bacilli had been found in milk of cows with and without disease of the udder. Milk from tuberculous cows had been proved to be infectious. Of 111 specimens of milk examined at Liver-

pool only four showed tubercle bacilli. Dr. Abbott and Dr. McEachran dwelt on the extreme difficulty of making a thorough microscopic examination of the udder.

A discussion on

PLEUROPNEUMONIA IN CATTLE

was opened by Dr. Adami, who claimed that it had been well proved by experts that Canada is and had long been free from the disease; but the Imperial Government still declined to recognize this. The imperial veterinarians, with the exception of one man who reserved his opinion, are not men who had done work of the highest class, and are not capable of judging thoroughly of the question. Canada's experts had agreed with the experts from England and the United States in stating that Canada is free from the disease. Canada felt that in giving superiority to the opinions of her government veterinarians the Imperial Government was unjust to Canada and to scientific men. Dr. Welch confirmed Dr. Adami's remarks.

DR. MCEACHRAN spoke as a representative of the Canadian Government, and the discussion was closed by the President.

DR. WELCH expressed hearty thanks for the reception given to guests from the United States, and moved a vote of thanks to the President for his able conduct of the meetings. Dr. Boyce, in seconding the motion, said that the President had won the thanks and affection of all. The motion was carried with enthusiasm. The President acknowledged the kindness shown him and the meeting came to an end.

SECTION IN ANATOMY AND PHYSIOLOGY.

SECOND DAY—SEPTEMBER 2D.

The chief business of this section was the discussion on

ANESTHETICS,

which was opened by PRESIDENT A. WALLER of London, PROFESSOR MACCALLUM being in the chair. Dr. Waller's remarks were illustrated by experiments and lantern-slides. The chief point was that chloroform acts upon the nervous system seven times more powerfully than ether, the clinical inference being that chloroform is not a safe anesthetic. The paper was discussed by Professor Richet of Paris, who was strongly of the opinion that deaths under chloroform are due to cardiac and not to respiratory failure, and that, therefore, the heart is the thing to watch.

SURGEON-COLONEL LAWRIE of Hyderabad followed, and stated his well-known views as to the inferences to be drawn from the experiments at Hyderabad, arguing that over-dosage alone is to be feared, that such over-dosage commonly results from irregular and gasping respiration.

DR. SHORE then described the results of experiment by himself and Dr. Easkell which went to show that chloroform has a direct and primary depressing influence upon the heart. Dr. Easkell corroborated the views of Dr. Shaw and an animated discussion arose between Surgeon-Colonel Lawrie and Dr. Shore, which was cut short by the President who called on Professor S. N. Stewart to

speak. The latter took a middle position on the question but was inclined to side with those who were in favor of ether. He thought, however, that many of the classic experiments should be repeated. Dr. Waller then replied on the whole discussion and described some more of his results, contending that the views of the majority concurred with the conclusions he had drawn from his experiments. Owing to the time occupied by the discussion, it being one o'clock, the reading of the remaining papers was postponed and the meeting adjourned.

THIRD DAY—SEPTEMBER 3D.

DR. GASKELL opened the discussion on the heart-beat. He gave a very lucid account of the history of the investigation of the subject and said that he had seen no reason to alter the views which he had published fourteen years ago, which attributed no power of rhythmic stimulation to the ganglionic cells in the heart.

The discussion was continued by DR. PORTER of Boston and DR. HOWELL of Baltimore, who agreed with the views of Dr. Gaskell. DR. MELTZER of New York then stated a theory he had formed as to the cause of the heart-beat, and was followed by DR. MACCALLUM of Toronto and DR. HUBER of Ann Arbor. DR. MILLS of Montreal criticised some of the views of previous speakers, and was surprised that reference to nerves had been so much left out of the discussion. He was inclined to regard some of Dr. Gaskell's views as rather "poetic." He was disposed to attribute the heart-beat to the coöperation of various factors which differ quantitatively in different animals. Dr. Gaskell replied and emphasized the fact to which Dr. Mills had drawn attention; namely, the variability of different hearts. The meeting closed with a demonstration of Hill and Barnardo's new sphygmometer by DR. HUTCHISON.

SECTION IN PSYCHOLOGY.

FIRST DAY—SEPTEMBER 1ST.

DR. R. M. BUCKE of London, Ontario, the President of the Section, delivered an address, entitled

MENTAL EVOLUTION IN MAN.

The speaker said that psychology ought to be the most interesting of studies, and as a matter of fact it undoubtedly is so, though it has been greatly discredited by the imperfection of the method by which it has until very lately been studied, *viz.*, the introspective.

He then referred to the necessity of researches in comparative psychology as an aid in the study of human mental evolution, and finally of the study of mental growth in the individual and in the race.

In regard to the future of the human intellect it was said that by slow and dubious steps taken in darkness our remote ancestors climbed wearily to simple consciousness. After another immense interval they reached self-consciousness. But that cannot be the end—the cosmic process cannot stop there—cannot, indeed, stop anywhere. Evolution, as far as we can see, has always gone on, is going on to-day, and will always continue. Our old mental faculties are some of them fading out, others

advancing toward greater perfection, and alongside of them new ones are springing up, some of which will, without doubt, be of overshadowing importance in the future.

So-called telepathy and clairvoyance seem to be specimens of such nascent faculties. He placed in the same class the phenomena of what is often called spiritualism. The labors of the Society of Psychical Research have made it plain that these phenomena really exist. These are instances of faculties which are not commonly possessed. Whether any such faculty will grow, become common, and finally universal in the race, or wither and disappear, will depend upon the general laws of natural selection, and upon whether the possession of the nascent faculty is advantageous or not to the individual and to the race.

The speaker said that of infinitely more importance than the faculties just mentioned is that superimposed upon self-consciousness, as is that faculty upon simple consciousness, a third and higher form of consciousness, which is at present making its appearance in our race. This higher form of consciousness when it appears occurs, as it must, at the full maturity of the individual, at about the age of thirty-five, but almost always between the ages of thirty and forty. There have been occasional instances of it for the last 2000 years, and it is becoming more and more common. In fact, in all respects, as far as observed, it obeys the laws to which every nascent faculty is subject. In the course of a few more millenniums there should be born from the present race a higher type of man possessing this higher consciousness. This new race, as it may well be called, would occupy, as toward us, a position such as that occupied by us toward the simple conscious *alalus homo*. The advent of this higher, better, and happier race would amply justify the long agony of its birth through the countless ages of our past.

REVIEWS.

THE MEDICAL AND SURGICAL USES OF ELECTRICITY.

By A. D. ROCKWELL, A.M., M.D., Formerly Professor of Electrotherapeutics in the New York Post-Graduate Medical School and Hospital; Fellow of the New York Academy of Medicine. Illustrated with two hundred engravings. New York: William Wood & Co., 1896.

THIS work is practically the ninth edition of Beard & Rockwell's well-known "Treatise on the Medical and Surgical Uses of Electricity," revised and enlarged by the present writer. The arrangement of the material is practically the same as in the older work. Part I. contains six chapters devoted to electrophysics, and enters very thoroughly into the purely physical principles of the various forms of electricity. In part II., the action of electricity on the various organs of the body is discussed in great detail; one chapter is devoted to the influence of electricity upon the general nutrition, a favorite subject with the writer. Part III., on electrotherapeutics is the most elaborate of the book, containing more than half of the reading matter of the entire volume. It reflects through-

out the author's well-known enthusiastic belief in the efficacy of electrotherapeutics, a belief which is hardly shared to any such degree by the younger school of neurologists. The methods of application for therapeutic purposes are given in detail and with such clearness that the general practitioner desiring to employ this method of treatment will find the book a useful and practical guide.

Part IV., the last of the book, deals very completely with electrosurgery, and includes an up-to-date addition in the shape of a chapter on the Roentgen Rays and their application in medicine.

In a future edition of the book we would suggest the advisability of describing the reaction of degeneration in greater detail, especially in its relations to the degenerative changes in the muscles and nerves; if we consider the great practical importance of electrodiagnosis we may well expect a very thorough discussion of the subject in a book otherwise complete.

PROCEEDINGS OF THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION, AT THE FIFTY-SECOND ANNUAL MEETING, HELD IN BOSTON, MAY 26-29, 1897.

THIS volume contains a number of interesting papers on subjects of the day. Among the most notable may be mentioned the annual address by G. Stanley Hall on "Psychological Education," in which the writer outlines the consensus of instruction required for a thorough equipment of the modern student of psychology. The standard aimed at is high, and it is hoped that it will be attained within a reasonable time.

A short paper by Henry J. Berkley on "The Intracortical End-apparatus of the Nerve Fibers" is in line with the rest of the author's valuable work on the minute histology of the central nervous system in health and in disease.

Dr. Frederick Peterson contributes an interesting paper in which the "Psychology of the Idiot" is discussed at length, and Dr. Hoch furnishes a valuable article on "General Paralysis in Two Sisters, Commencing at the Age of Ten and Fifteen Respectively—Autopsy in One Case."

DIE FÄRBLINDHEIT UND IHRE DIAGNOSE. VON DR. M. OHLEMANN. Brannschweig: Joh. Heind. Meyer, 1897.

IN this little pamphlet, the author describes the different methods by which the diagnosis of color-blindness can be made. Without entering into any theoretic discussion, he simply relates the facts in a clear and condensed manner, so that the book will be of service to those who have to examine a great number of people for this affection.

CHIRURGIE DES VOIES URINAIRES. By DR. E. LOUMEAU. 2d Vol. Bordeaux: Feret et Fils, 1897.

THIS work is a collection of clinical observations which have appeared at intervals in current French periodicals. The twenty-seven articles embrace the surgical diseases of the urethra, but in a few instances only are the cases or the treatment extraordinary or unusual.

The author favors immediate suture in rupture of the

urethra. In treatment of urethral fistulæ, he resorts to suprapubic drainage, when plastic measures fail. His experiences in hypertrophy of the prostate give a more favorable showing for double castration, than resection of the vas deferens. The unique cases are: "Congenital Stricture with Urethral Calculus," and "A Large Cicatrix of the Vault of the Bladder."

"The Morphology of Balanitic Hypospadias," is a lucid explanation of the various types as determined by embryologic development and which the accompanying illustration clearly shows. The other cuts depict a urinal for use in cases of permanent suprapubic drainage, and a new form of urethral sound.

THERAPEUTIC HINTS.

An Efficient Remedy for Round Worms.—WARD (*Pediatrics*, September, 1897) gives the following prescription for use against round worms, which he heartily recommends, having used it successfully many hundreds of times:

℞	Santonin	.	.	.	.	.	gr. iii
	Hydrarg. chlor. mitis	.	.	.	.	.	gr. x
	Sacchr. alb.	.	.	.	.	.	q. s.

M. Ft. chart. No. 2. Sig. For a child, three to six years old, one powder on retiring, and the other in the morning, fasting.

For Erysipelas.—Externally, to the inflamed surface, a 10-per cent. ichthyol ointment, applied daily; internally, a teaspoonful every two hours of the following:

℞	Tr. ferri chlor.	.	.	.	.	3 iv
	Glycerini	.	.	.	.	3 iss.

For Acute or Subacute Cystitis.—

℞	Ext. buchu fl.	.	.	.	.	3 i
	Potassii citratis	.	.	.	.	3 iii
	Spt. etheris nitrosi	.	.	.	.	3 ss
	Syr. limonis, q. s. ad.	.	.	.	.	3 iii.

M. Sig. Teaspoonful in water every three hours.

For Advanced Syphilis and Anemia.—

℞	Hydrargyri chlor. corros.	.	.	.	.	gr. iss
	Tr. ferri chlor.	.	.	.	.	3 v
	Glycerini	.	.	.	.	3 ii
	Aquæ, q. s. ad.	.	.	.	.	3 iv.

M. Sig. Teaspoonful in water every three hours.

An Astringent Gargle.—

℞	Ext. rhus glabræ	} aa	.	.	.	3 i
	Ext. hydrastin. fl.		.	.	.	
	Potassii chlor.	.	.	.	.	3 iss
	Glycerini	.	.	.	.	3 i
	Aquæ, q. s. ad.	.	.	.	.	3 vi.

M. Sig. Dessertspoonful to a tablespoonful in small quantity of water as a gargle.

For Acute Rheumatism.—The following combination has been highly recommended:

℞	Ammonii salicylatis	.	.	.	.	3 iii
	Liq. pepsini	.	.	.	.	3 iv.

M. Sig. Teaspoonful in water every two or three hours.

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ORIGINAL ARTICLES.

THE EARLIEST POSSIBLE RECOGNITION OF TUBERCULOSIS.¹

By JAMES T. WHITTAKER, M.D.,
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It is now established that pulmonary tuberculosis develops in consequence of the inhalation of the tubercle bacillus from the sputum of other tuberculous individuals. The ignorance of this fact and indifference to it hitherto, with the neglect of the simplest precautions, satisfactorily accounts for the appalling number of cases of the disease, and accounts, also, for the insidiousness of the infection. In most cases the source of contamination may be discovered in long and close association with the patient. But the infection may lie latent for years. Childhood is the period of most frequent infection, puberty of most frequent manifestation. Experience with the diseases of children based upon *post-mortem* examination shows that the first tuberculous deposits occur in the lungs, remain latent, and manifest themselves by physical signs and symptoms only after puberty. (Penzoldt.) During this long interval the disease may show itself only in general impairment of health, with headache, earache, otitis media, nervous dyspepsia, neurasthenia, rheumatoid pains, amenorrhea, etc. Children who suffer from frequent or more or less continuous malaise, who feel more than others the confinement of the schoolroom, who are said to be delicate and disposed to phthisis, should be tested for tuberculosis.

The following are a few of the earliest signs of tuberculosis:

Odor of Breath.—Rosenbach speaks of an odor of the expired air peculiar to phthisical patients. This odor, he says, is like that of bronchitis, but is distinguished by a kind of faint sweetness, probably due to the action of protozoa.

Red Line on the Gums.—The occurrence of a red line on the gums, the so-called Frederick-Thompson line is well-known. I attach no importance to it. It is said to be observed most frequently in the young. I have looked for it, but found it only exceptionally.

Clubbed Fingers.—Of clubbed fingers I will say nothing, save that they are also seen in certain forms

of heart disease. In phthisis they belong to the phthisical habitus, which is interpreted in our day as an already existing infection.

Local Signs.—Every obstinate local affection of bones, joints, skin, testis, or Fallopian tubes, should excite suspicion. Adenitis is extremely suspicious.

Fever.—The importance of anything like a continued or frequently recurring fever, without known cause, is now universally appreciated. The elevation of temperature may be only a fraction of a degree, but it shows itself every evening and during a period of several weeks or months. This sign has now become so significant as to at once excite the suspicion of tuberculosis. Absolutely reliable conclusions may be drawn only when the temperature is taken *per rectum*. The temperature should be observed three times a day. The evening records are most desirable. Malaise and increase of temperature contribute all the more directly to the diagnosis if they are associated with impairment of nutrition, anorexia, blood changes, or anemia, and especially with chlorosis. The younger Klebs, who tests every such patient without exception with tuberculin, has never yet failed to get the reaction of tuberculosis in chlorosis.

Night-sweats.—Night-sweats usually belong to a later period in the history of the disease, in fact, to the septic period; but they sometimes show themselves early, in exceptional cases preceding even cough or any pronounced change in nutrition.

Albuminuria.—Albuminuria is wont to show itself to a slight degree in the earliest stages of phthisis. Tissier speaks of an albuminuria as pretuberculous, which he noticed mostly in the morning, with a concomitant phosphaturia, in a regular intermittent cycle, preceding all other symptoms of pulmonary tuberculosis. The albuminuria disappeared as soon as the tuberculosis had become definitely established. I have seen the albuminuria disappear in this way, but I have never observed phosphaturia in these cases. This albuminuria is not a symptom of nephritis; it is a toxic alteration of the albumen, whereby it becomes more dialyzable. Erythremus cordis, palpitation, and early dyspnea are symptoms of this same toxemia.

The Diazo Reaction.—The diazo reaction, in my experience, is much less common, and is less reliable, though it may indicate the tuberculosis which often follows measles. This reaction is absent at first, but

¹Abstract of a paper read at the Twelfth Annual Meeting of the Association of American Physicians, held at Washington, D. C., May 5, 1897.

shows itself suddenly and continuously up to the time of death in the typical miliary tuberculosis of children.

In miliary tuberculosis the tubercle bacillus may be demonstrated in the blood. Krönig withdraws a few drops of blood, dilutes it with 10 c.cm. of acidulated distilled water, subjects it to the centrifuge for two minutes, and examines the sediment in the usual way for tubercle bacilli.

Cough.—Cough, which is the commonest symptom of phthisis, sometimes leads us astray in making a diagnosis from chronic bronchitis, chronic pneumonia, and chronic influenza, which may all be independent of tuberculosis. It is the morning and evening cough which is most suspicious, but any cough which continues for more than three weeks should lead to further exploration. There may be no cough at all in acute miliary tuberculosis. Latent deposits do not excite cough.

The Tubercle Bacillus in the Sputum.—Much depends upon the source of the specimen of sputum, and the patient must be instructed to bring up secretion from the lungs. The use of the centrifuge after the fluidification of the sputum by soda or potash shortens the examination and increases the value of the test.

Hemorrhage.—Sometimes the occurrence of hemoptysis is the first positive indication of the existence of phthisis. Under all circumstances the spitting of blood is suspicious, premising, of course, that the blood comes from the lungs. It is not too sweeping an assertion that when hemoptysis occurs in a person apparently enjoying perfect health, it is a sure indication of tuberculosis.

Tuberculin.—The first test dose of tuberculin for the cases of lightest infection (suspected) should be 5 mg., the second 10 mg., or 1 cg., the third 2 cg. These doses may be given on succeeding days, or better, every other day, preferably in the evening, that the temperature records may be properly observed on the following day. Failure to obtain reaction after three tests excludes the presence of tuberculosis.

The most serious objection to the use of tuberculin, and that which limited its general use in the beginning, was the one first urged by Virchow, that it awakened tuberculosis from latent sources and disseminated the disease. This statement was eagerly caught up and echoed on all sides. Baumgarten believed that under its influence a more rapid and abundant colonization of bacilli occurred in the lungs. Fürbringer went so far as to declare that miliary tuberculosis was found oftener in patients treated by tuberculin than in the non-injected. This authority invoked the aid of statistics in the statement that miliary tuberculosis was found in the lungs after the

use of tuberculin in forty-three per cent. against six per cent. in the non-injected, and a general tuberculosis was found after the use of tuberculin in twenty-one per cent. against ten per cent. of the non-injected. But these objections are now matters of mere historic interest, for competent observers everywhere, following the footsteps of Guttman and Ehrlich in Germany, and Trudeau, Dennison, and Klebs in this country, bear testimony to the fallacy of these views, and to the unquestionable efficacy of the agent as a diagnostic medium.

It was in vain that the advocates of tuberculin, especially Guttman and Ehrlich, protested that these results were observed only when the agent was used in too large doses or in too advanced stages of the disease. I have used tuberculin every day in hospital and private practice for six years, now in more than 1000 cases, and have never seen evil result from it.

Koch, April 1, 1897, declared that the fear of the tubercle bacilli being rendered mobile in consequence of the reaction produced by the administration of tuberculin, and therefore being transmitted to healthy animals, has been shown, in many thousands of injections made in cattle, to be perfectly groundless. "My own individual experience in the use of tuberculin in the early diagnosis of tuberculosis in man coincides with and supports this view. In all these cases there was never the slightest intimation of anything like a mobilization or transmission of tubercle bacilli. This experience should entirely annul the foolish prejudice which exists regarding the causing of mobility of tubercle bacilli, and it should put the diagnostic value of tuberculin in the recognition of tuberculosis in man upon the same plane as in animals."

The following cases of positive and negative evidence, selected from a large number of cases, illustrate the value of tuberculin as a means of diagnosis:

Neurasthenia. Positive Evidence.—Miss M., aged eighteen years, a tall, fragile, delicate-looking girl, complained of languor, palpitation upon exercise, and fatigue. The menses were sometimes delayed. No other anomaly was observed. There was no cough and no fever. I had treated the mother of this girl for incipient tuberculosis, the diagnosis having been established by the discovery of the tubercle bacillus in the sputum in the absence of physical signs, and felt sure that the patient had some local deposit in consequence of having lived so long in the atmosphere of infection. A test-dose of tuberculin, 1 mg., was given at 2 P.M. Reaction set in the following morning at 8 o'clock, with chill, fever, temperature of 103° F. during the course of the day, pain in the bones, headache, etc., the symptoms all subsiding the same night.

Negative Evidence.—Miss H., aged twenty-two years. History of tuberculosis in family of both

father and mother. Patient very tall, exceedingly slender, and emaciated, extremely elongated, cylinder-shaped thorax. Confined to bed for several months. No cough; no fever; good appetite. Test-injections of tuberculin, 0.005, 0.01, and 0.02, negative. This patient is improving rapidly under a pneumatic and general tonic treatment.

Night-sweats. Positive Evidence.—J. M., aged twenty-eight years, had had slight cough, morning and evening, during several months, with night-sweats every night. No other sign of illness. Examination in every way negative. No cough; no bacilli in what sputum he could raise. Complete reaction to tuberculin, the use of which twice a week in gradually increasing doses, completely arrested the night-sweats after three weeks.

Sister of Charity, aged twenty-six years. Brought to the hospital to be treated for night-sweats, with which she had been affected for more than a month, and which proved refractory to the use of atropin, agaricin, and quinin, but which ceased entirely after three weeks under the use of gradually increasing doses of tuberculin.

Negative Evidence.—A. M., aged twenty-two years. Melancholia, sexual neurasthenia, prostatorrhea. Night-sweats for several weeks, occasionally profuse. Test-injections of tuberculin, 0.001, 0.005, 0.01, negative. The night sweats ceased and the patient improved in every way under the use of quinin and aromatic sulphuric acid, together with urethral injections of lactate of silver, two per cent., with the Ultzmann catheter.

Joint Disease. Positive Evidence.—Mrs. W. C. S., aged twenty-nine years, tall, delicate, pallid. Lived in a house several months with an uncle who died of tuberculosis. Had one miscarriage one year ago at two months. Complained of general weakness and pains in the trunk, especially on turning. There was some stiffness of the right wrist. No cough, but short-breathing on exercise. Temperature 99° F. No physical signs save perhaps a slightly defective expansion of the right lung. Test-injection of tuberculin increased the temperature two degrees.

This patient subsequently developed tuberculosis of the right carpus, which finally necessitated amputation of the forearm. Notwithstanding this extreme measure, the patient succumbed to acute tuberculosis three months later.

Negative Evidence.—Miss F., aged thirty years. March 18, 1897. Diagnosis, chronic rheumatism. Right elbow swollen; hand and arm cold, blue, and anesthetic. The disease proving refractory to salicylates, iodine, and external applications; test-injections of tuberculin were given, one on April 17th, and one on April 19th, 0.01 and 0.02, respectively. No reaction.

Pulmonary Tuberculosis. Positive Evidence.—W. V., aged thirty-eight years; four children, two tuberculous. Had "lung disease" as a child seven or eight years old, and pneumonia three years ago. Gained in weight since, from 130 to 150 pounds. Cough during seven or eight months with considerable catarrh. Expecterated tough, white mucus. Physical

examination entirely negative. Lungs clear, with good expansion. Examination of sputum showed presence of one or two bacilli, not absolutely certain. Injection of tuberculin, 0.01 at noon, produced elevation of temperature one and one-half degrees the next morning.

Negative Evidence.—A physician brought his daughter, aged sixteen years, to me, a diagnosis of Bright's disease having been made, because during three months she had had headache, lassitude, and slight albuminuria. Her temperature for the most part was subnormal, but showed occasional elevations of one-half to one degree. There was nothing in the condition of the urine to indicate Bright's disease. The specific gravity was normal. There were no casts. The diazo-reaction was constant. I felt sure that the albuminuria depended upon a change in the albumin from a toxemia. Although there was no cough, I suspected a latent tuberculosis, but after a thorough test with tuberculin, I had to abandon this suspicion. I then tested the blood with a typhoid culture and found the typical agglutination and arrest of motion of bacilli described by Widal. Having fortified this observation on two subsequent occasions, at intervals of a week, I felt justified in attributing the condition to typhoid fever.

Abdominal Tuberculosis. Positive Evidence.—Mrs. A. P.; pain and swelling of the abdomen during three months, with gradually increasing weakness and loss of flesh. Temperature subnormal. No cough. No evidence of disease of the lungs; abdomen somewhat distended; obstipation. Palpation revealed nodulation, as from agglutination of the intestine. Satisfactory reaction to tuberculin. Subsequent laparotomy, with recovery.

Negative Evidence.—Mrs. P., aged forty years; membranous enteritis. No history of tuberculosis, but had had anal fistula, which excited a suspicion of the presence of tuberculosis. Test-injections of tuberculin were negative. Treated subsequently with euphoron suppositories. Condition much improved.

Sore Throat. Positive Evidence.—K. T., female, aged twenty years; incipient tuberculosis. Had been treated with tuberculin and sustained by it for two years, the disease having made no advance in that time except when the patient interrupted the treatment for several months. Sore throat appeared occasionally, apparently being of catarrhal origin, but upon one occasion, under maximum dosage, a crop of ulcers marked by grayish-white deposit appeared about the larynx, with edematous infiltration of the interarachnoid mucosa. The treatment was interrupted for one week, after which the dose was resumed in less amount, and under gradually increasing dosage the ulcers disappeared.

C. P., aged twenty years, in perfect health "until upon one occasion he was shaved by a barber and had hairs pulled out of a pimple, which had become sore, by means of hair-forceps. The barber dug under the skin with his pincers." Two weeks later the glands became affected and the general health began to suffer. The throat became sore. Two months later the patient came to me with the glands swollen un-

der the right jaw, the arm, and in the right groin. In the course of a week sore throat developed, with uniform redness and swelling, and with the formation of one ulcer on the side of the veil of the palate. I first suspected an accidental inoculation of syphilis, and treated the patient with mercurial inunctions and iodine. There was no material improvement under this treatment. As I had previously treated a member of his family for pulmonary tuberculosis, it occurred to me to make a test-injection of tuberculin. This injection was followed by a typical reaction. I then commenced the regular treatment, finding that every increase in the dose was attended by manifestations of tuberculous deposits in the throat. It appeared as if colonies of bacilli under the mucosa had been brought to the surface by the tuberculin. They were always soon destroyed by local applications of nitrate of silver in stick form, and the patient made a good recovery after three-months' treatment with tuberculin.

Negative Evidence.—Miss H. had been aphonic for several weeks. The voice was husky for months. The general health was poor. There was considerable pallor and apparent weakness, but no fever or sweats. The patient expressed herself in whispers. There was no cough and no sputum. The examination of the chest was entirely negative. The larynx was catarrhal throughout. The epiglottis was heavy and concealed the interior. At times, however, a glance could be obtained within the throat, revealing a thickened, reddish, gelatinous-looking mass, at the middle of the left vocal cord.

A test-injection of 1 mg. of tuberculin gave no reaction. A second injection of 5 mg. gave no reaction; a third injection of 10 mg.—i.e., 1 cg., gave no reaction. I then excluded tuberculosis, cocaineized the throat, and touched the gelatinous mass twice with nitrate of silver melted upon the end of a laryngeal probe. The mass melted away, and the patient recovered the use of her voice in two weeks.

The importance of an early diagnosis no more requires mention here than a repetition of the well-known fact that the disease, at all times amenable to arrest at this stage, has now, under the use of the perfected tuberculin, probably become subject to absolute cure.

The examination of the sputum should include a search for the influenza bacillus, for the diplococcus of pneumonia, and for the streptococcus and other pyogenic micro-organisms. The exclusive presence or predominance of these micro-organisms determines the complications of tuberculosis. The majority of these patients, as we now know, succumb not to tuberculosis but to sepsis. The failures in the treatment of the disease in man with the specific remedies hitherto employed, are largely due to the fact that tuberculosis in man becomes in the later stages a mixed infection. These are the cases which are benefited to the greatest extent by creosote, climato-therapy, etc. Jakowski developed pyogenic bacteria

nine times in seven patients from the blood of hectic fever. But, as Hewelke concludes, negative findings in the blood do not justify negation of mixed infection in pulmonary tuberculosis.

These studies will give us new subdivisions and new names—streptomycosis, staphylomycosis, etc.—but in the meantime will tend to reinstate the old term, phthisis, by the demonstration that pulmonary tuberculosis is only one of the forms of this disease. This observation does not under rate the gravity of tuberculosis, because it is the tubercle bacillus which prepares the way for the invasion of the secondary or pyogenic micro-organisms. We may now distinguish uncomplicated tuberculosis, which marks only a small percentage of all cases of lung disease, runs a course without fever, or, if fever exists, is unfavorable because the disease is then so far advanced. These uncomplicated cases are especially suitable for tuberculin treatment. Most cases of later course represent infection with the streptococcus, and these are to be separated into those of active course with fever, and passive without fever. The distinction chiefly lies in the fact, that in the first case the parenchyma of the lungs is attacked with the streptococci, while in the second, the streptococci lie only in superficial colonies in the bronchi, etc. (Spengler.) Rarer cases are mixed infections with the pneumococcus, micrococcus tetragonus, staphylococcus, influenza, and pseudo-influenza bacillus. All these forms, associated with fever, are to be treated only tentatively with tuberculin until the complicating affections have been subdued, if they can be, by the open-air treatment, by creosote, cognac, climate, etc. Ten years ago I reported some remarkable arrests of this kind of sepsis by means of the administration of pure oil of garlic.

Most of the cases of phthisis are readily recognized as such, and need no test-injections, but the diagnosis in our day demands a differentiation of cases. Moreover, the diagnosis should be declared sooner, for it is plain now that the earliest possible appreciation will lead to the extinction of the disease.

Preservative Power of Glaciers.—In October, 1866, Capt. Henry Arkwright and three companions were killed by an avalanche on the Grand Plateau of Mt. Blanc. The bodies of the three companions were recovered a week after the accident, but that of Captain Arkwright could not be found. During the present summer, however, the melting glacier presented it to view 9000 feet below where he was killed thirty-one years ago, and it was recovered. The head and feet were missing, but otherwise the body was perfectly preserved. The right hand was especially life-like, even the red tint of the blood having been preserved. All of his personal ornaments were intact, and the white handkerchief in his pocket still retained his name.

NOTES ON THE ETIOLOGY OF INFLAMMATION OF THE ACCESSORY SINUSES OF THE NOSE.¹

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In the present paper we wish to make a preliminary report on the results of our studies of eighteen cases of inflammation of the accessory sinuses of the nose. The material for the most part has been derived from the private practice and dispensary service of one of the writers (Ingersoll), but to the courtesy of Drs. Hamann, Bunts, Sherman, Stephan, and Wenner we are indebted for the opportunity of making cultures in the cases of several patients on our list. The cases were both acute and chronic, some dating, according to the histories, from twenty to thirty years.

We shall limit ourselves in the present report to a statement of the results of our studies, and leave the details of the cases and cultures for a later article. Our cases include suppurations of the antra, and the ethmoidal and frontal sinuses. We have not met with inflammation of the sphenoidal sinuses. The methods employed for obtaining the material for study were several. From the antra the material was obtained in one of three ways: (1) By exploratory puncture with a straight trocar well up under the middle third of the inferior turbinal in the majority of cases; (2) through an opening in the alveolar border of the superior maxilla, after the extraction of a tooth; and (3), in two cases in which neither of the first methods could be adopted, pus was obtained by means of a platinum needle, or a cotton swab, from or near the orifice of the maxillary opening. In all cases the utmost care was used to cleanse the nose and to avoid contamination of the pus and infection of the patient. Pus from the frontal and ethmoidal sinuses was usually obtained at the time of operation; in one case, however, it was obtained by puncture, and in two through spontaneous openings.

The methods of examination of material obtained from the sinuses was as follows: Both stained and unstained coverslip preparations were studied, and the kinds and relative number of the cells were

noted. Tubercle bacilli and protozoa were looked for, but always with negative results.

Cultures were made on coagulated blood-serum, and on agar-agar plates.

The pathogenesis of nearly all the organisms found was determined by inoculation of rabbits or guinea-pigs.

The antrum of Highmore was involved in fifteen cases, with a total of seventeen antra; the right antrum in five cases (VII., X., XI., XVII., XVIII.), in three cases alone, and in one case with the ethmoidal sinuses (VII.); and in one case with the frontal and ethmoidal sinuses (XVII.). The left antrum was involved eight times alone (Cases I., II., III., IV., VIII., IX., XIII., XVI.). Both antra were affected in two cases (VI. and XIV.), and in each of these the ethmoidal sinuses were involved. In these cases the process was chronic. Three of the cases of antral disease were acute (IV., VII., XI.), and twelve were chronic. Two of the acute cases followed influenza (IV. and VII.). In the first the streptococcus pyogenes was found in pure culture, and in the second, the influenza bacillus and the staphylococcus pyogenes aureus; the third case followed a severe coryza, and the diplococcus lanceolatus and the pseudodiphtheria bacillus were found. Of the twelve chronic cases, two followed influenza (I., XIII.), the first being associated with hypertrophy of the inferior turbinal, and was complicated with facial erysipelas, an abscess of the alveolar process of the superior maxilla, and a fatal secondary septicemia, due to the streptococcus pyogenes. There was found in the antrum of this patient, who came to autopsy, a polypos, and the walls were swollen, deeply congested, and edematous. In the second patient the nose was normal, and cultures from the antral contents gave the bacillus mucosus capsulatus.

Case II. was secondary to a syphilitic ulceration of the alveolar and palatal processes of the superior maxilla. In the pus from the antral cavity the streptococcus pyogenes, the staphylococcus pyogenes aureus, and the bacillus mucosus capsulatus were found. In this case nasal polypi were also present.

Case XVII. followed an acute coryza subsequent to exposure after pneumonia, and was apparently of thirty-years' standing. There is no record of the condition of the nose. The frontal and ethmoidal sinuses were involved with the right antrum. In the cultures from the antrum, the streptococcus pyogenes, and the staphylococcus pyogenes aureus were found.

In Case XVIII. the *atrium infectionis* was apparently through a decayed bicuspid tooth. In the cultures from the pus the diplococcus lanceolatus was found in pure culture. There is no record of the condition of the nose. In Case VIII. there was

¹ Read at the Fifty-second Annual Meeting of the Ohio State Medical Society, Cleveland, May 31, 1897.

tenderness and swelling about the first and second bicuspid of the affected (left) side, but there was nothing wrong with the teeth themselves. There was hypertrophy of the left inferior and middle turbinals. Cultures in this case gave the staphylococcus pyogenes albus and a thread fungus which was not pathogenic for guinea-pigs or rabbits. In Case XVI. there had been a purulent discharge from the right nostril for a year, and there was pain and swelling about the second left bicuspid tooth. The tooth was badly decayed and an abscess extending from it was found. The streptococcus pyogenes and the staphylococcus pyogenes aureus grew in the cultures. In Cases IX. and X. there was a long-standing atrophic rhinitis. In Case IX. there was anemia and neurasthenia. Cultures from this patient gave the staphylococcus pyogenes albus and an unidentified bacillus. In Case X. the streptococcus pyogenes and the staphylococcus pyogenes aureus were found.

Of the two cases of bilateral empyema of the antrum, Case VI. had had a purulent discharge from the left nostril for twenty-two years, and from the right nostril for twelve years. Twelve years before coming under observation all the upper teeth had been extracted and a plate inserted. About five years ago there was an otitis media acuta sinistra. Since then both nasal fossæ have been occluded and the sense of smell lost. On examination both nasal fossæ were found to be filled with polypi, and one large polypus filled the nasopharynx. From the right antrum a pure culture of the streptococcus pyogenes was obtained. From the left, the streptococcus pyogenes and bacillus mucosus capsulatus. In Case XIV. the streptococcus pyogenes was obtained from both antra. There is no note of the condition of the nose, or of antecedent acute infectious disease in this case. In both cases (VI. and XIV.) the ethmoidal and frontal sinuses were involved.

Of the chronic cases, three followed acute infectious diseases (influenza, coryza, and pneumonia), one was due to syphilitic ulceration of the hard palate and alveolar process; two were clearly, and another possibly, secondary to dental decay, and two were associated with atrophic rhinitis; in three cases there were nasal polypi present, and in three there were hypertrophies of the turbinals.

In the seventeen antra examined, the streptococcus pyogenes was found in eleven, five times alone, four times with the staphylococcus pyogenes aureus, once with the bacillus mucosus capsulatus, and once with the pneumococcus and the bacillus mucosus capsulatus. The staphylococcus pyogenes aureus was never found alone, but with the streptococcus pyogenes four times (III., X., XVI., XVII.), and with the influenza bacillus once (Case VII.). The ba-

cillus mucosus capsulatus was found alone in one case (XIII.), with the streptococcus in the left antrum of Case VI., and with the diplococcus lanceolatus and the streptococcus pyogenes in Case II. The diplococcus lanceolatus occurred alone in one case (XVIII.), once with the pseudodiphtheria bacillus (II.), and once with the streptococcus and the bacillus mucosus capsulatus (VI.). The staphylococcus pyogenes albus was found once with a non-pathogenic thread fungus (VIII.), and once with an unidentified bacillus (IX.).

In three cases the frontal sinuses were alone affected, the right sinus twice (V., XII.), and the left once (XV.). In one case (XVII.) the right antrum and the ethmoidal sinuses were also involved. In the first case (V.) the process followed a severe coryza. Twenty years ago there was intense frontal headache, most marked on the right side. After a few days spontaneous rupture occurred, and there has been a continuous discharge of creamy pus ever since. Several cubic centimeters of pus were obtained by aspiration through the fistulous tract. The right middle turbinal was hypertrophied at its anterior end, and the septum deviated slightly. There was no discharge of pus from the nostril. The other sinuses appeared normal. Cultures gave the staphylococcus pyogenes aureus and an unidentified non-pathogenic bacillus.

In the second case (XIII.) the patient, a girl aged eleven years, eighteen months ago had a severe attack of coryza. Since then there has been frontal headache, most marked on the right side, and a purulent discharge from the right nostril. Pus from the right frontal sinus contained the diplococcus lanceolatus in pure culture. In Case XV. the left frontal sinus was alone affected. The process was of long duration, and the abscess ruptured spontaneously. Pus obtained from the sinus contained the staphylococcus pyogenes aureus and the bacillus mucosus capsulatus. In Case XVII. with empyema of the right antrum there was inflammation of both the frontal and ethmoidal sinuses. From the antrum and the frontal sinuses the streptococcus pyogenes and the staphylococcus pyogenes aureus were obtained.

In Case XIV. there was empyema of both antra, and of the ethmoidal and frontal sinuses. The frontal sinuses contained pus and polypi. In the pus from the frontal sinuses, as well as from the other cavities, obtained several times, there was always found a streptococcus growing in short chains which slowly liquefied gelatin. This organism was not pathogenic for animals. The first three cases were instances of chronic empyema of the frontal sinuses, two of them following acute coryza. The ethmoidal sinuses were never found alone affected, but always in association

with antral empyema, and, with one exception, with empyema of the frontal sinuses as well. In Case VI. both of the antra and the frontal sinuses were involved (see above). In the material from the ethmoidal sinuses the streptococcus pyogenes was found. In Case XIV. both antra and the frontal sinuses were involved, and there again the streptococcus pyogenes was found in the ethmoidal scrapings. In Case VII. the process was associated with empyema of the right antrum following influenza, and in the pus the staphylococcus pyogenes aureus and the influenza bacillus were found. In the last case (XVII.) there was also empyema of both antra and frontal sinuses as well as of the ethmoidal sinuses. In the material obtained from the latter the staphylococcus pyogenes aureus and the bacillus pyocyaneus were found.

While in our experience primary inflammation of the frontal sinuses is not uncommon, we have never met with inflammation of the ethmoidal sinuses, except when secondary to, and accompanying inflammation of the antra either alone or in combination with inflammation of the frontal sinuses. Our material, except in the first case, which came to autopsy, has been derived from the living. The inflammatory process was well established in every case. In the affected antrum of Case I. there was a polypus, the cavity was filled with a thick pus, and the walls were congested and edematous. In the other cases the character of the pus varied. Usually, however, it was mucopurulent; not infrequently it contained fibrin, and in some cases it was thick and of a creamy appearance. As previously stated, tubercle bacilli and protozoa were never found. Besides bacteria and polymorphous nuclear leucocytes, which were present in varying numbers, in nearly every case large, swollen, flat, sometimes round, sometimes ovoid or even polygonal cells, epithelial in appearance, were seen. These cells varied in size, had oval or round vesicular nuclei, with finely granular protoplasm, and often contained large or small fat droplets. Occasionally they contained bacteria. These cells were found in the material from the antra and from the frontal and ethmoidal sinuses. Columnar epithelial cells were never seen. These swollen epithelial cells must have been changed and desquamated cells from the walls of the various cavities. In some cases these cells were very much more numerous than in others. Cases in which these cells are numerous, we are disposed to call catarrhal.

Death from Chloroform.—Professor Ryle, D.D., President of Queen's College, Cambridge, England, lost a child of eight years recently from the administration of chloroform.

YEAST NUCLEINIC ACID IN THE TREATMENT OF SEPTICEMIA, WITH REPORT OF CASES.¹

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FOR the purposes of this article we will define septicemia as a general systemic invasion by one or more varieties of the pyogenic or putrefactive bacteria, their products, or both. There are but few forms of infectious disease which we dread more to meet, or fear more when met, than septicemia. The rapidity with which it proves so frequently fatal, and the fruitlessness, in such cases, of the most faithful, assiduous, and often heroic treatment, are enough to move our minds to anxiety and fear in the presence of such a relentless disease.

It has been my fortune during a good many years to be placed in a position which has compelled me to meet and treat many of these most undesirable cases. Railway men are peculiarly liable to badly lacerated and contused wounds, and in too many instances there occurs every opportunity for early infection. Often, time and distance and, necessarily, imperfect operations and dressings are elements of mischief which have accomplished much harm by the time the patient reaches the hospital. Treatment as laid down in text-books is often unsatisfactory; even though the patient recovers, the tissues around and about the wound where infection occurred may be left in an indolent and sluggish condition, rendering healing slow and difficult.

A year ago last winter I had the privilege of working in Dr. Vaughan's private laboratory at the University of Michigan, and while there observed his experiments with yeast nucleinic acid on rabbits and guinea-pigs which had been inoculated with the bacillus tuberculosis, bacillus tetani, and bacillus anthracis, each in different animals. The marked inhibitory, and frequently curative, effect of the nuclein treatment of these various infections, well measured in all by careful controls, made a deep impression upon my mind. After resuming my regular duties it was not long before I was confronted with the task of treating a severe case of septicemia. In considering the treatment I should pursue, I remembered the striking effects I had observed from the use of yeast nucleinic acid, and determined to try it, in conjunction with other remedies, in the treatment of my patient.

Nuclein is said to be distinctly germicidal, for certain bacteria at least. Whether its germicidal properties, when introduced into the living body, are wholly due to the promotion of leucocytosis, and

¹ Read before the St. Paul (Minn.) Academy of Medicine.

consequent phagocytosis or not, I am at this time unable to say. One thing seems to be certain, and that is that nuclein has no antitoxic properties. This has been demonstrated by Vaughan and McClintock in their series of experiments on rabbits and guinea-pigs with yeast nucleic acid and the toxins of diphtheria and tetanus.¹

The outcome of the case above referred to was most satisfactory, and I was inclined to believe the nuclein was deserving of some credit, and determined, when opportunity offered, to give it further trial. Up to the termination of my fourth case I was not aware that any one else had used yeast nucleic acid in the treatment of septicemia. At this time I wrote to Dr. Vaughan inquiring if he had knowledge of any such application of the remedy, and asking him, if he had, to kindly refer me to the literature of the subject. His reply to my question was: "I am just sending to the publishers an article on nuclein in which is contained the following paragraph concerning its use in septicemia:

"Boise and Hofbauer have reported good results from the treatment of puerperal septicemia with nuclein, the former using my preparation, and the latter that of Horbaczewsky. Hofbauer states: 'Among the clinical symptoms which were observed during the course of treatment, the following may be mentioned:

"'1. *Effect upon the General Condition.*—This was manifested in a very marked and even surprising manner. Patients who previously lay apathetic and half asleep now gave a clear and satisfactory answer when questioned as to their condition. Though the temperature remained above the normal, nevertheless, the improved appearance and the calm expression of countenance offered a decided contrast to what had been previously observed. At the same time the icteric tint of the skin disappeared and the appetite was improved.

"'1. *Influence on the Local Condition.*—The puerperal ulcers soon took on a healthy appearance and healed. The discharges from the septic uterus rapidly lost their odor and purulent character, and lessened in quantity. The first dose increased the temperature, followed by a gradual decrease. The remissions were longer and more pronounced and the exacerbations slighter, until restoration to the normal resulted."

Following are the cases which I wish to report:

CASE I.—Nicola J., Italian, aged thirty-six years, laborer, of healthy appearance and well-nourished, was admitted to the Northern Pacific Hospital,

Brainerd, Minn., at 5.30 P. M., May 31, 1896, for a severe gunshot wound of the arm which had been received twenty-four hours previously. At that time the wound had been cleansed and an antiseptic dressing applied. Our examination showed a large, ragged, and septic wound on the inner aspect of the middle portion of the left arm. Nearly two-thirds of the biceps had been destroyed, about two inches of the brachial artery and vein had been shot away, and the median and ulnar nerves were lacerated. The patient was somewhat exsanguinated and had a rapid and weak pulse, and his general condition was poor. The vitality of the hand and forearm was quite uncertain. Whisky and strychnin were given hypodermically. Under chloroform anesthesia, we tied the vessels, removed all dead and doubtful tissue, also a large quantity of bird shot, drained thoroughly, packed loosely with iodoform gauze, and enveloped the whole limb in a voluminous dressing. His temperature the same evening was 100° F. and pulse 140. The bowels were moved. Stimulants, in the form of strychnin, digitalis, and whisky, were freely given, and milk, egg-nog, and beef tea were taken frequently.

June 1st. Highest temperature, 100.4° F.; pulse, 140; systemic intoxication becoming quite marked. At 8.30 P. M. he was ordered 2 c.cm. of a one-per-cent. nuclein solution (Vaughan's) every fourth hour, hypodermically. Vomited twice during the day. Bowels moved. Administration of stimulants continued. Water and other fluids freely allowed. June 2d. Highest temperature, 100.6° F.; pulse, 120; skin sallow and conjunctivæ stained. Vomited twice. Bowels moved. Wound dressed. Same medication and diet. June 3d. Apparent improvement. Highest temperature, 100.4° F.; pulse, 114 and of improved quality. Face losing its sallow, drawn look. Not so restless. Wound dressed. Bowels moved. Same medication. June 4th. Patient markedly improved. Highest temperature, 100.8° F.; pulse, 108 and of still better quality. Some desire for food. Wound dressed. The use of nuclein discontinued. June 5th. Continued improvement. Highest temperature, 100° F.; pulse, 104.

From this time forward the patient was considered out of danger, but it was not until June 21st that his temperature reached normal and remained there. His pulse ranged between 84 and 100 for some time afterward. The limb was saved, but there was gangrene of the finger-tips. It was greatest on the little finger, destroying it completely as far upward as the last phalanx extended; it did not extend so far on the ring finger, still less on the middle finger, and only involved the skin over a small area of the index finger. This strange condition was doubtless due to the injury sustained by the nerves of the arm. Motor paralysis of these fingers still existed to some extent when the patient was discharged.

CASE II.—Enrico D., Italian, aged twenty years, laborer, of healthy appearance, was admitted at 4 P. M., September 2, 1896. Right leg had been amputated in middle third the day before for car-wheel injury. The whole stump was swollen and boggy.

¹"The Physiological Action and Therapeutic Uses of Yeast Nucleic Acid, with Special Reference to its Employment in Tuberculosis," THE MEDICAL NEWS, February 27, et seq., 1897.

The flaps looked dark and unhealthy, and were distended by blood-clots. All stitches were removed, clots turned out, wound irrigated, packed with iodoform gauze, and an antiseptic dressing applied. Calomel purge. Highest temperature, 100.8° F.; pulse, 96. September 3d. Highest temperature, 101° F.; pulse, 96. Wound dressed. Tissues red and glazed; parts of both flaps looked gangrenous. Patient restless. Saline cathartic. September 4th. Highest temperature, 102° F.; pulse, 94. Patient greatly depressed. Wound dressed twice; dry and glazed; slough black. Serous discharge. Nuclein 20 minims hypodermically, every fourth hour. September 5th. Highest temperature, 102.6° F.; pulse, 90. Wound dressed twice; stump a little less swollen and boggy. General condition slightly improved. Saline cathartic. Nuclein continued. September 6th. Highest temperature, 101.4° F.; pulse, 86. Wound dressed; purulent discharge. Patient more comfortable. Nuclein continued. September 7th. Highest temperature, 103° F.; pulse, 94. Wound dressed; purulent discharge. Nuclein continued. Cathartic given. Patient somewhat more comfortable. September 8th. Highest temperature, 101° F.; pulse, 74.

From this time on the patient did well and made a good recovery, so far as the general systemic results of infection were concerned.

CASE III.—Felix L., French-Canadian, aged twenty-eight years, engine-wiper, strong and well-nourished; good family history; was admitted October 29, 1896, suffering with diseased testicle. He stated that while at work on September 7, 1896, he slipped and fell astride of the hand-rail of a locomotive and injured his right testicle. Had had some medical attention. On examination, the right testicle and cord were found to be greatly enlarged, the former being very dense and hard in its upper portion and soft and fluctuating below, from which there was a sinus discharging thick, cheesy pus, mixed with glandular tissue. Temperature, 99.2° F.; pulse, 80. Urine normal.

On November 2d, the patient having been fully prepared for operation, he was anesthetized with chloroform, followed by ether and, after careful examination, it was decided that castration was indicated, which was done. Every precaution was taken to make the wound aseptic and drainage was provided for in the lower part of the scrotal wound. November 3d. Temperature, 101° F.; pulse, 88. Cathartic given. November 4th. Highest temperature, 103.8° F.; pulse, 100. Patient somewhat restless, but free from pain. Wound dressed; no redness or inflammation, but one or two sutures over inguinal canal removed for better drainage. Bowels active as result of cathartic. November 5th. Patient slept very little during night; is restless, but has no pain; sweating some and seems to be suffering from severe systemic intoxication. Wound dressed and found looking well; considerable serous discharge. Removed all sutures and packed loosely with iodoform gauze. Pilocarpin, hypodermically, and large quantities of water and other fluids were given. Highest temperature, 104.8° F.; pulse, 112. Nuclein, 2

c.cm. of a one-per-cent. solution, hypodermically, every fourth hour, was ordered. November 6th. Highest temperature, 104.8° F.; pulse, 110. Slept very little during previous night. Wound clean, but considerable drainage of serum. Microscopic examination of same was negative. No culture was made. All emunctories kept active. November 7th. Patient a little more comfortable and slept a little more during the night. Wound in good condition. Same medication and treatment. Highest temperature, 104.2° F.; pulse, 100. November 8th. Patient very much the same, except a little more comfortable. Same medication and treatment. Highest temperature, 103.8° F.; pulse, 106. November 9th. Patient passed a fairly comfortable night; general condition greatly improved. His temperature continued to fall all day and by evening was normal, as was the pulse. From this time forward his temperature and pulse never rose above normal, and progress and recovery were uneventful.

CASE IV.—Oscar N., Swede, aged twenty-three years, laborer, well-nourished, was admitted December 7, 1896, for injury of right foot, which had been crushed between a bumper and deadwood two days before. Examination showed injury to four smaller toes, two of which were completely crushed and had to be removed. Plantar surface burst open over ball of foot; lower two-thirds of dorsum badly lacerated and subcutaneous tissues greatly contused. Wound septic and evidence of systemic invasion. Temperature, 102.6° F.; pulse, 100. Wound treated antiseptically. Medication: Calomel, followed by saline; chlorodyn for pain; nuclein, 2 c.cm. of a one-per-cent. solution, every fourth hour, hypodermically. December 8th. Highest temperature, 102.8° F.; pulse, 108. Epistaxis. Wound dressed. Skin gangrenous on dorsal surface of foot to the extent of size of palm of hand. Foot put in continuous warm bath of 1-to-500 carbolic acid solution. Nuclein continued. December 9th. Highest temperature, 102.4° F.; pulse, 98. General condition improved. Nuclein continued. December 10th. Highest temperature, 101° F.; pulse, 100. Epistaxis. Evidence of systemic intoxication less pronounced. Nuclein continued. From this time on there was a daily improvement, and on December 15th the use of the nuclein was discontinued. On this date his temperature reached 100° F., and his pulse 90. The patient made a good recovery.

CASE V.—W. F. F., Welsh, aged twenty-nine years, locomotive fireman, of healthy appearance, was admitted December 27, 1896, for gunshot wound of right forearm, received forty-two hours previously. A 44-caliber ball had entered just above the wrist and shattered the lower end of the ulna into a score or more of pieces and badly fractured the radius at its lower end. A local surgeon had carefully drained and dressed the wound. Soon after admission the wound was examined. The discharge was inclined to be purulent, and the hand and forearm were swollen. Every effort was made to render the wound aseptic. It was drained and loosely packed with iodoform gauze and dressings applied. Cathartic

and light diet ordered. Evening temperature, 98.4° F.; pulse, 84. December 28th. Wound dressed and condition about the same. Evening temperature, 98.8° F.; pulse, 90. December 29th. Wound condition same as day before. Evening temperature, 98.8° F.; pulse, 90. December 30th. Wound dressed; swelling almost gone, but discharge still doubtful. Temperature, 99° F.; pulse 80. December 31st. Wound dressed; not looking well. Highest temperature, 102° F.; pulse, 94. January 1st. Patient had a bad night; wound found very unsatisfactory. Chloroform was administered and wound freely opened. All necrotic tissue was removed. Thorough irrigation with bichlorid and pyrozone. Sterile iodoform was well rubbed in and the wound loosely packed with iodoform gauze and voluminous dressing applied. Highest temperature 103° F.; pulse, 104. Nuclein, 2 c.cm. of a one-per-cent. solution given hypodermically every third hour. Urinalysis yielded negative results. January 2d. Patient fairly comfortable. Very free catharsis. Highest temperature 102° F.; pulse, 90. January 3d. Highest temperature; 101.8° F.; pulse, 100. January 4th. Temperature, 102.2° F.; pulse, 96. January 5th. Highest temperature, 102.6° F.; pulse, 96. Saline cathartic ordered. January 6th. Highest temperature, 102.6° F.; pulse, 100. Blood count gave 10,125 white corpuscles to the c.mm. Nuclein every fourth instead of every third hour. January 7th. Highest temperature, 101.8° F.; pulse, 96. Wound dressed; seropurulent discharge. Forearm and hand somewhat swollen. Appetite poor and some nausea. Cathartic, which was effective. January 8th. Hand and forearm swollen more than day before. Counter opening made on back of hand for evacuation of pus accumulation. Profuse perspiration. Progressive emaciation apparent. Highest temperature, 102.2° F.; pulse, 100. Ordered 10 minims of a five-per-cent. nuclein solution every fourth hour, instead of a one-per-cent. solution. January 9th. Wound dressed twice, dressings being wet with solution of potassium permanganate. Large amount of purulent discharge. Swelling increasing and extending above elbow. Profuse perspiration. Skin sallow. Bowels active from salines. Highest temperature, 104.4° F.; pulse, 120. January 10th. Wound dressed twice. Profuse purulent discharge. Whole limb greatly swollen. Red lines in skin, indicating lymphangitis. Hand and arm placed in 1-to-500 carbolic bath at a temperature of 100° F. Patient vomited. Profuse perspiration. Sallowiness of skin well-marked. Highest temperature, 103.4° F.; pulse, 112. Symptoms of osteomyelitis constantly increasing. Whisky, strychnin, and digitalis, which had been given during previous three days, ordered increased.

January 11th. The degree of systemic poisoning was so great, and the osteomyelitis so well marked, that it was decided that amputation should be performed at once. This was done at about the middle of the forearm. The periosteum was swollen and softened and stripped from the bones in retracting the muscles; the medulla of the ulna was dis-

eased quite up to the point of section. In the radius the internal conditions were more favorable. No sutures were used in the flaps, which were packed with iodoform gauze. No marked shock from anesthetic (chloroform followed by ether) or operation. January 12th. Patient slept fairly during preceding night and was quite comfortable. Highest temperature, 101.8° F.; pulse, 100. Wound not disturbed. January 13th. Patient doing well. Wound dressed; free drainage. Highest temperature, 100.2° F.; pulse, 96. January 14th. Patient doing finely. Wound not dressed. Some appetite. Bowels moved by cathartic. Highest temperature, 100.4° F.; pulse, 88. Nuclein discontinued. From this time forward patient did well. February 1st. Blood count showed white corpuscles 6333 to the c.mm. Patient going about out of doors and general condition is excellent, but stump has not closed on account of a limited necrosis of ends of both bones.

CASE VI.—The following history was furnished by Dr. T. N. McLean of Fergus Falls, Minn.: Merrian A., aged six years, a well-nourished, healthy-looking child of good family history. Was called to see him December 23, 1896, at 11.30 A.M. Found both feet badly crushed and lacerated from freight cars having passed over them. The tissues of the left leg were lacerated and torn half way up to the knee. Fracture of bones of foot but not of leg. Some of the bones of the right foot were fractured. Patient was chloroformed, loose pieces of bone removed, wound thoroughly cleansed with bichlorid solution, sutured, and dressed with iodoform and iodoform gauze. At 4 P.M. the patient was very weak. Temperature, 98° F.; pulse, 150. Extremities cold and bathed in cold sweat. Gave strychnin, $\frac{1}{80}$ gr., and brandy, hypodermically, every third hour. Gave normal saline solution per rectum. December 24th., A. M., patient very restless all night; very delirious; picked bed-clothes constantly; had not rallied from shock. Temperature, 98° F.; pulse, 150. Extremities cold. No vomiting. Eleven P.M. Temperature, 102° F.; pulse, 150. Very restless and delirious. Bowels moved by enema. Would not take nourishment. December 25th. Temperature 103° F.; pulse, 150. Very restless all night; profuse sweating; delirious all the time; would not take nourishment. Removed dressings and reapplied fresh ones. December 26th. Temperature 103.4° F.; pulse, 150. Very restless; marked subsultus; delirious all the time. Took about four ounces of milk during previous twenty-four hours. Moved bowels by enema. Gave purgative. December 27th. Condition same as yesterday. Dressed wounds; found right foot looking fairly well. Left leg looked erysipelatous on inner aspect all the way up to the knee. Outer surface over crushed area was gangrenous. Dressed both limbs with hot bichlorid solution, 1 to 4000, and covered with oiled silk. Six P.M. Temperature, 104° F.; pulse, 150. Reapplied hot bichlorid dressings.

December 28th, 10.30 A.M., Dr. Courtney in consultation. We found patient with a temperature of 103° F., and pulse of 156. Skin yellow and perspiring. There had been diarrhea all of the pre-

vious night. Examination of the wounds showed the left foot and leg to be gangrenous almost halfway to the knee; right foot gangrenous almost to ankle; tissues emphysematous and infiltrated with pus. Dr. Courtney amputated both legs, the left one at the middle of middle third, the right at junction of lower and middle thirds. The vessels were tied, flaps packed with iodoform gauze (no sutures), and voluminous dressings applied. Strychnin $\frac{1}{10}$ of a grain, brandy 1 ounce, and 10 minims of a one-per-cent solution of nuclein given every third hour, hypodermically. Morphin, $\frac{1}{8}$ of a grain, was given whenever necessary.

6 P.M. Patient resting well. Temperature, 101° F.; pulse, 140. December 29th. Temperature 100° F.; pulse, 140. Patient quite rational; taking some nourishment; no subsultus. Slept fairly well. December 30th. Temperature, 100° F.; pulse, 130. No pain, no delirium, no subsultus. Dressed wounds; found them perfectly healthy; very little discharge and no pus. December 31st. Temperature, 99.5° F.; pulse, 130. Had a good night and no pain. Patient took nourishment fairly well. January 1st. Temperature, 99.5° F.; pulse, 130. Dressed wounds and found them quite clean. Stitched right stump. January 7th. Temperature, 98.4° F.; pulse, 120. Right stump practically healed. Stitched left stump. Stopped nuclein solution; continued small doses of strychnin. Appetite good. Bowels regular. January 25th. Temperature, 98.4° F.; pulse, 100. Right stump entirely healed one week ago; left stump practically healed. Patient is gaining in flesh every day. Crawls all over the house.

CASE VII.—E. L. E., American, aged twenty-eight years, laborer, a very strong and healthy man, was admitted February 5, 1897, for severe crushing injury of right hand and wrist; no bones broken. Injury had been received thirty hours previously by having had the hand caught between cars. Soon after injury, hand had been cleansed, drainage introduced, and moist dressing applied to reduce swelling. After admission, temperature was found to be 100.8° F., and pulse 96. The hand was thoroughly cleansed and the wounds irrigated, drained, and dressed antiseptically. Saline cathartic given and free catharsis resulted. February 6th. Patient fairly comfortable; wound dressed. Evening temperature, 99.4° F.; pulse, 80. February 7th. Patient not nearly so well; more swelling in hand and arm; vomited twice. Hand was put in warm bath of 1-to-500 carbolic acid solution. Evening temperature, 103.4° F.; pulse, 120. Yeast nucleinic acid, five-per-cent. solution, was given in 10-minim doses, hypodermically, every third hour. Strychnin, gr. $\frac{3}{12}$ every fourth hour. Calomel, followed by saline purge. February 8th, A.M. Temperature, 101.8° F.; pulse, 110. Hand very painful; swelling extended almost to elbow. Hand taken out of bath and put in dry dressing for few hours. Bowels moved twice. Skin and conjunctivæ but little stained. Nuclein continued. Morphin for relief of pain. Strychnin, whisky, and digitalis, every fourth hour. Evening temperature, 102.8° F.; pulse, 104.

February 9th. Patient grew rapidly worse during the night; became delirious, and temperature went up to 104° F., and pulse to 140. Stimulants were increased. Enteroclysis of normal salt solution at 100° F. Later, intravenous injection of normal salt solution also. Profuse perspiration and severe rigors. All efforts failed to beget improvement. Patient became semi-unconscious and died at 9 P.M., a little more than four days after admission, and a little more than five days after being injured. The arm was never swollen above the elbow, and no pus appeared in the tissues or wounds. No autopsy was obtainable.

CASE VIII.—Allen C., aged eighteen, American, laborer, admitted February 26, 1897, with croupous pneumonia of lower lobe of left lung, from which he had been suffering during three weeks. Evening temperature, 100.4° F.; pulse, 96; respiration, 34. Patient was emaciated and much exhausted. Careful attention directed to the emunctories; stimulants and easily digestible and nourishing food ordered. For about a week there was no improvement. The pulse became somewhat slower but was very irregular, doubtless caused by a greatly dilated stomach. The intestines also were greatly distended with gas, causing very severe colic. After this, for four or five days, the general condition was considerably improved; the temperature was but little above normal, the pulse ranged between 80 and 100, and the respiration between 20 and 28.

About March 9th the patient's condition again became worse. Evening temperature, 102° F.; pulse, 112. Well-marked symptoms of septicæmia present. Stomach irritable; some vomiting. Skin presented a dull and icteric appearance. Nuclein, in $\frac{1}{2}$ -dram doses, of a five-per-cent. solution, by mouth, every third hour, added to other treatment. March 10th. Left pleural cavity aspirated and pus found. March 11th. Resected seventh rib, external to axillary line, and evacuated quite a quantity of pus and coagulated fibrin. March 12th. Temperature normal, pulse, 98. Free perspiration and great prostration. Examination of pus from the pleural cavity showed the presence of the micrococcus pneumoniae crouposæ in abundance. Nuclein discontinued two days later.

For more than a week following, the condition of the patient was extremely critical, then improvement began and was rapid. On April 8th the patient was about the house, and only a small sinus at the site of operation remained, from which there was scarcely any discharge.

CASE IX.—John P., Italian, aged twenty years, laborer, admitted March 17, 1897, three days after injury. Compound fracture of left leg at junction of middle and lower thirds. The leg had been very severely injured between cars. There was a large open wound over and down to the tibia (which alone was fractured) and the tissues were torn and lacerated, mostly subcutaneously, from the malleolus half way to the knee on the outer side of the leg. In addition to these, there were other open wounds of the skin. The ends of the bone had been trimmed

off and placed in good position and an antiseptic dressing applied by the local surgeon. Evening temperature on the day of admission, 100.2° F.; pulse, 130. Patient was plainly suffering from general systemic poisoning. Leg dressed; hematoma evacuated and a voluminous aseptic dressing applied. Cathartic given. Strychnin gr., $\frac{3}{12}$, and 15 minims of a five-per-cent. yeast nucleinic acid solution, given hypodermically every fourth hour. March 18th. Patient very restless and general condition very poor. Wound dressed; very free discharge of serum. Enteroclysis of normal salt solution. Nuclein increased to twenty minims every fourth hour; water given freely and emunctories kept active. Evening temperature, 100.8° F.; pulse, 136. March 19th. Patient more comfortable. Wound dressed; free serous discharge. Vomited once during the day; bowels moved several times. Temperature, 100° F.; pulse, 110. March 20th. Patient passed a comfortable night and was considerably improved. Wound dressed; less discharge. Temperature, 100.8° F.; pulse, 108. March 21st. Patient still improving; appetite returning; wound looking well. Temperature, 100.4° F.; pulse, 102. Nuclein discontinued. From this time on the patient improved very rapidly, and on March 31st his temperature reached normal and his pulse, 70. With the improvement in the general condition the wounds began to heal rapidly and have continued doing so ever since.

CASE X.—V. H. E., American, aged thirty-seven years, bridge foreman, admitted March 26, 1897. While working on a railroad bridge, thirty-one hours previously, the patient fell twenty feet, on to ice and stones, and received a fracture of the tarsal bones of the right foot. There was severe contusion of the foot and lower half of leg, with laceration of the skin and subcutaneous tissues over the outer malleolus as well. There was also some slight contusion of the right chest, but no fractured ribs. Temperature, 101° F.; pulse, 78. Wound was dressed and foot elevated. Cathartic administered. Nuclein was given in 15-minim doses, hypodermically, every fourth hour, and light diet ordered. March 27. Patient feeling quite ill. Bowels moved. Same medication. Temperature, 101.8° F.; pulse, 84. March 28th. Patient about the same. Had some bronchitis, with considerable cough. Temperature, 102.6° F.; pulse, 88. Leg greatly swollen and painful, but no evidence of suppuration. As we were more strongly impressed than before that sepsis was present, the nuclein was continued, hypodermically. No local reaction from its use. Calomel purge. March 29th. Bowels moved. Condition of foot and leg the same. Annoying cough, but no evidence of pneumonia could be found. Temperature, 102° F.; pulse, 96. March 30th. Wound dressed; local condition unchanged; no suppuration. Temperature, 101.8° F.; pulse, 80. Same medication. The patient remained about the same, with an evening temperature of about 102° F., and pulse of 80, until April 5th. At this time both began to improve and within two days were normal. The

swelling disappeared from the foot and leg, and a plaster cast was applied. There was no suppuration at any time. At the present time, April 10th, the patient has a very good appetite and is about the house.

In addition to these cases, I know personally of two others which were successfully treated with nuclein, but I am not in possession of such clinical notes as will enable me to write them up in detail at this time. Both of them occurred in the practice of my late assistant, Dr. S. M. Kirkwood, now of St. Paul. They were very severe and exceedingly dangerous cases, and, for a time, both lives were despaired of. In one, the infection was introduced through face and mouth wounds, and the local lymph-glands were greatly indurated and enlarged. In the other, infection occurred through the avenue of a lacerated wound of the little finger. There was suppurative tenosynovitis, and the hand and forearm had literally to be riddled with drainage openings. The arm, as well as the patient's life, was saved.

The recital of these cases has been lengthy, and perhaps tedious, but to fully weigh and value the results of a new treatment all the principal facts ought to be worthy of consideration. From the histories given there can be no question as to their severity and seriousness, and the imputation of simple surgical fever to any would not be consistent with their clinical manifestations. To say that some may have been cases of sapremia would simply be begging the question, in view of the definition with which this paper was begun. But, in order to avoid argument with the pathologists, we may justly claim that sapremia may be fatally serious.

Passing some of these cases in review, it will be seen that Case VIII. (empyema), on superficial inspection apparently differs rather widely from the others and may seem out of place among them, and, in consequence, that the application of the nuclein treatment might appear rather unwarranted. In answer, I may say we know quite well that the micrococcus pneumoniae crouposa is quite frequently found in other localities than the chest, and in connection with inflammation and suppuration of tissues and other organs elsewhere. It may induce septicemia. Flexner, in his excellent paper on "The Study of Terminal Infections," says, in considering the general infections: "Not infrequently a local lesion, such as erysipelas, acute peritonitis, or acute endocarditis, exists which antedates the general invasion of the body by the infectious agent."¹ In Case VII., which resulted fatally, administration of the yeast nucleinic acid was not begun as early as it should have

¹ "Transactions of the Association of American Physicians," 1896.

been. During the first two days after admission, it was thought the symptoms were due to irritation from the painful contusion and laceration of the hand rather than to serious microbic infection. After this the disease seemed wholly irresistible. That I permitted the proper time to pass before resorting to the use of a remedy, which by this time had gained a place in my confidence, is a matter of deep regret to me.

Among the striking results of the treatment in this list of cases I might mention, first, the promptness with which the general health was restored after convalescence had begun, and, second, the readiness with which the injured tissues, which had furnished the infection atrium, healed, this being very noticeable in all except in Case II. In this case the general health improved very rapidly, but the tissues of the stump remained for a long time sodden and very indolent. These results are in decided contrast to my previous experience in the treatment of septicemia, that is, before using the yeast nucleinic acid. Then convalescence in a great many of the patients who recovered was slow; the pulse would long remain rapid and weak, the skin sallow and dull, and the nervous system considerably shaken. The treatment of the local condition, too, where injury and infection occurred, would often tax one's patience and ingenuity to the utmost.

In regard to the auxiliary treatment of these cases, I presume there will not be wanting those who will ask if this alone would not have accomplished the results obtained. I must in honesty admit that it might possibly have done so. On the other hand, with equal candor, I am compelled to say that no other form of treatment previously employed by me ever yielded, in anything like the same number of cases, such satisfactory results. It is true, of course, that the number of cases treated with yeast nucleinic acid is not convincingly large; still, I am encouraged to persevere with it, and with a considerable feeling of confidence.

In my opinion the most valuable forms of auxiliary treatment are those which will effect free elimination by all of the emunctories that may be pressed into service, so as to rid the system of all the toxins possible. This is important because it not only acts on the direct source of danger (the toxins), but often obviates or mitigates another ever-present danger, *viz.*, auto-intoxication. After this I would place the free but judicious use of stimulants, among the best of which are strychnin and whisky. The proper administration of food will at all times receive attention at the hands of the careful clinician.

As regards the use of yeast nucleinic acid in septicemia, there are several points to which I wish to invite attention:

1. It should be given at the earliest possible moment that septic infection is suspected. One should not wait for the typical and classic symptoms as given by text-books. My observations have taught me to believe that if one waits until rigors, icterus, diarrhea, delirium or apathy, profuse perspiration and a foul-smelling and discharging wound are added to an abnormal increase in temperature and pulse-rate and a restless alertness on the part of the patient, to convince him that it is septicemia that must be dealt with, instead of surgical fever or something else, he has been guilty of a serious waste of most valuable time.

2. The nuclein should always, in septicemia at least, be given hypodermically, if possible, in order to secure prompt action of the given dose. If the one-per-cent. solution is used, at least 30 to 40 minims, undiluted, may be given every three or four hours. If the five-per-cent. solution should be used, from 10 to 15 minims may be given every three or four hours, but ought to be diluted with distilled or at least with sterile water. This is necessary to avoid the local reaction which is sometimes caused when this solution is given undiluted. In my experience, the five-per-cent. solution is preferable, for one reason at least; it is always stable. The one-per-cent. solution is not stable; it sometimes becomes cloudy and unfit for use, even before the bottle containing it is opened.

If it be true, as Wells states,¹ that leucocytosis is to be regarded as a local condition, then injection of the nuclein ought to be, in the early stage, as near to the place of primary infection as possible. I have invariably made the injections into the cellular tissue and muscles of the chest.

3. The injection region should be examined daily in order to determine if local reaction can have anything to do with the patient's increased temperature and pulse-rate. If it has, it is due to one of two things: either to insufficient dilution of the 5-per-cent. nuclein solution, or to imperfect preparation of the skin or syringe.

I wish I could have added the results of thorough laboratory study to each of these most interesting cases, but neither my time nor that of my assistants was available for prolonged work of this kind. Though it is probable that before long the exact status of the remedy, and the *rationale* of its action will be satisfactorily explained. The following simple conclusion is the only one I shall offer at the present time: The results of my work with yeast nucleinic acid in septicemia are sufficiently encouraging to justify a feeling of confidence and a continuance of its use.

¹ "Leucocytosis and Immunity, with a Critical Analysis of the Theory of Nuclein-Therapy," THE MEDICAL NEWS, October 17, 1896.

CLINICAL MEMORANDUM.

REPORT OF A CASE OF INTRADURAL SPINAL TUMOR EXTENDING THROUGH THE FORAMEN MAGNUM, COMPRESSING THE EXTREME UPPER PORTION OF THE CORD, AND ALMOST COMPLETELY DESTROYING IT AT THE THIRD CERVICAL SEGMENT.¹

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I WISH to express my indebtedness to Dr. Francis McNaught for the privilege of seeing and studying the following interesting case:

G. B. G., male, single, aged fifty-two years, white, born in New York State, a bridge-builder and miner by occupation, was first seen by me in consultation with Dr. McNaught in St. Luke's Hospital, March 2, 1897. His family history was negative, so far as I was able to learn. The patient had suffered from the usual diseases of childhood, from typhoid fever at his seventh year, and from malarial (intermittent) fever for seven months each year, from 1872 to 1879. He had possessed a strong constitution, had worked very hard, lived irregularly, exposed himself a great deal to inclement weather, and at times drank to excess. About twenty years ago he contracted syphilis, but did not suffer from any of the secondary symptoms of this disease. He had suffered from gonorrhea twice. Seven years ago he was "lead" while working in an ore-sampling room. The lead poison developed suddenly, and he was delirious for some time. The blue line was found on the gums, but he did not suffer from colic or constipation.

He enjoyed very good health from 1890 till May, 1896, when his present trouble was first apparent to him. The first thing to attract his attention was his inability to strike a drill firmly and with his accustomed precision. Loss of power and dexterity in his hands and arms gradually became more marked, until, at the end of a month or two from the time when his attention was first attracted to his trouble, he had to change the character of his work. About the time that power was first impaired in his arms and hands he noticed a numb, cold, and full sensation in these parts, beginning first in the hands. At times he suffered from excruciating pains in the shoulders and arms. Soon the legs became affected similarly to the arms, but the right leg was more helpless than the left. He did not remember the order in which the sensory and motor symptoms developed in the arms and legs. Whether early in the disease sensation was more affected on one side and motion on the other, he could not definitely recall. From June to October he was taken from place to place and treated by several physicians for syphilis. When the legs became almost completely paralyzed, which was

some time in September, 1896, he lost all voluntary control of the sphincters of the bladder and bowel. His urine had to be drawn, but he did not soil his clothes if the bladder was regularly emptied by means of a catheter.

In October, 1896, he came to Denver and entered St. Joseph's Hospital. He remained there until February 19, 1897. During this time he was not critically examined by any one, but was treated for syphilis. Dr. Devlin, who saw him a number of times, tells me that his left leg and arm were more helpless than the right, but that sensory disturbance was greater on the right side than on the left.

I made a careful examination of his condition on March 2, 1897. I found him lying in bed, completely helpless. He had to be fed, but could sit for hours at a time if supported in a reclining chair. He had lost all control of the sphincters of the bladder and bowel and was greatly emaciated. He complained of great pain in the region of the bladder. He suffered from pain in the limbs and from spasmodic contraction of the muscles of the arms and legs. The pains started in the shoulders and ran down to his hands, and in the hips and extended downward to the feet. During the attacks of muscular contraction the hands and arms were frequently in forced extension, and the legs, at the hips and knees, in extreme flexion; at other times the legs were rigidly and painfully extended, with well-marked plantar flexion of the feet. The pain and muscular contraction would continue until relieved by a hypodermic injection of morphin, and would return as soon as the influence of the sedative had worn off.

The shoulder, arm, and hand-muscles were completely paralyzed and greatly atrophied. He could slightly flex and extend the legs at the knees and hips. All power of motion was lost at the ankles. The muscles of the legs were not greatly wasted. The neck muscles were very weak. He could rotate the head slightly, but could scarcely raise his head from the pillow. The posterior cervical muscles were a little stronger, so that he had little difficulty in holding his head erect if he were held in a sitting posture. The trunk muscles were almost completely paralyzed. The tongue was protruded in the median line; he could open and shut his mouth with considerable force, and none of the facial or ocular muscles were affected. The knee-jerks were both decidedly increased. All the other deep reflexes, including those of the arms, were absent. All the superficial reflexes were abolished.

Tactile Sense.—Anesthesia to a camel-hair pencil in motion was absent anteriorly from the lower border of the inferior maxillary bone downward; laterally from the lower border of the mastoid bones downward, and posteriorly from the fourth cervical spine downward. There was an area on the posterior surface of the neck, extending about two inches laterally from the spinous processes on either side from the fourth cervical spine upward to the scalp, over which the simple contact of a feather or a camel-hair pencil could readily be felt. Sensation over the entire scalp, face, and ears was normal.

Pain Sensation.—This was present, although perverted and delayed throughout the trunk and legs. It was less acute than normal, and greatly delayed in the legs, fairly

¹ Read by title before the Section on Neurology and Medical Jurisprudence, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, June 1, 2, 3, and 4, 1897.

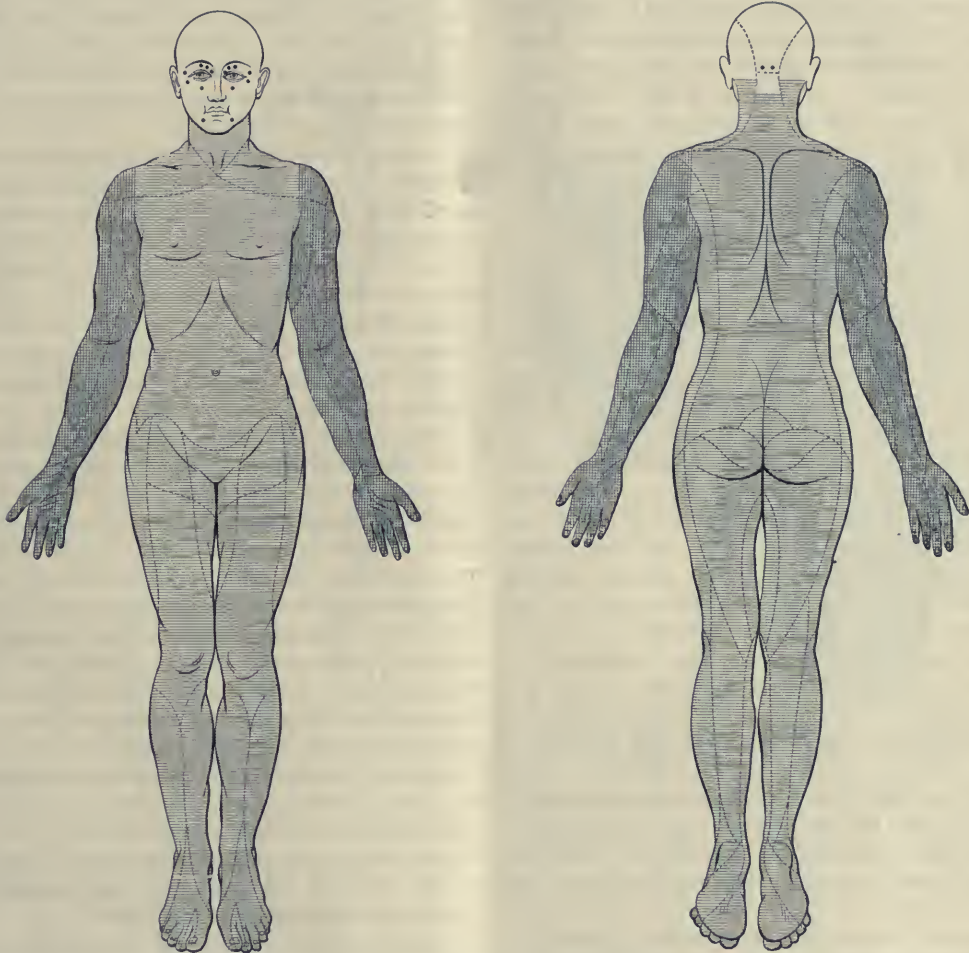
acute over the trunk, external genitalia, hips, and around the anal region. The increased time required to recognize the prick of a sharp point over these areas was well pronounced. Over the hands, arms, and shoulders it was nearly abolished. Over the extreme upper portion of the chest and over the anterior and lateral aspects of the neck it was very acute, but delayed. In those regions in which tactile sense was normal, the face, scalp, and posterior upper portion of the neck, pain-sensation was normal.

Temperature Sensation.—Cold substances, such as

stances were recognized as such. Over the hands, cold substances gave rise to a sensation of burning pain. Over the arms and shoulders the contact of these was not felt.

Heat.—Anteriorly, a bottle containing water at a temperature of 140° F. gave rise to no sensation until the lower border of the inferior maxillary bone was reached. Posteriorly, heat sensation from the fourth cervical spine downward was lost. Cool substances at a temperature of about 90° F., and warm ones at a temperature of 100° F., gave rise to no sensation in any portion of the body or limbs over which tactile sense was absent. (See

FIG. 1.



Horizontal lines denote loss of tactile and temperature sense. Vertical lines denote partial loss of pain and sensation.

bottles containing water at about the temperature of 60° F., gave rise to a burning sensation in the feet, to no sensation over the legs and external genitalia, to a decided sensation of pain over the abdomen and lower portion of the chest, to almost no sensation over the middle third of the chest, and to a sensation of warmth in the upper third of the chest. Over the neck anteriorly, from the clavicle to the lower border of the inferior maxillary bone, cold substances gave rise sometimes to a sensation of cold, and at other times to a sensation of heat. Posteriorly, over the upper portion of the neck, cold sub-

stances were recognized as such. Over the hands, cold substances gave rise to a sensation of burning pain. Over the arms and shoulders the contact of these was not felt.

Eyes.—Vision, fields, discs, and fundi were normal. Smell and taste were present and equal on the two sides.

Hearing.—Watch: R., $\frac{1}{12}$; L., $\frac{1}{12}$. He thought that he heard the tuning-fork better with the right ear. He had been partially deaf in the left ear for a number of years.

In the legs and abdomen he had a full, dead, and painful sensation. In the chest, up to the clavicle, there was

a drawing or constricted feeling. The skin over the neck anteriorly appeared to him as though it were covered over with collodion, and deeper in there was a sensation of pressure. The arms felt as though they weighed a ton, and were the seat of almost constant pain. The spine was not tender to pressure except in the upper cervical region. Forced movements of the arms or of the head from side to side or forward gave rise to pain in the upper cervical region. Carrying the head backward did not cause him pain. The electric reactions of the muscles of the arms and neck were not tested, on account of his feeble condition and the constant pain from which he suffered.

The bodily temperature was usually about normal or a little below. The pulse varied from 70 to 100. Respiration was entirely diaphragmatic, a little rapid, but no symptoms of dyspnea were observed unless he attempted to talk. In speaking, he had to stop after uttering two or three words and take a long, deep inspiration, during the effort at which his head would involuntarily be completely raised from the pillow.

Diagnosis.—The history that the patient gave of the development of his symptoms served to confuse rather than to enlighten one in the investigation of the case. He stated that the right leg was more affected than the left. Dr. Devlin, on the other hand, is confident that when he saw him in October, 1896, his right leg was much stronger than the left. At the time of my examination, March 2, 1897, a short time before his death, all symptoms were bilateral, and consisted in abolition of nearly all the functions of the entire spinal cord, and in great impairment of those intimately concerned in respiration. The diagnosis lay between myelitis, tumor of the cord, syringomyelia, cervical pachymeningitis, and pressure myelitis, the compression being due to caries of the spine or from tumor arising from the bones or membranes.

Myelitis, focal in character, could not be excluded from the history alone, as this was so indefinite and some portions of it were so conflicting. A chronic myelitis, involving the upper cervical region of the cord and destroying tactile sensation as high as the second cervical nerve, with almost complete paralysis of nearly all the voluntary muscles innervated by the spinal nerves, and attended by marked wasting in the muscles of the hands, is incompatible with life, as the phrenic nerves would be seriously affected.

Tumor of the Cord in the upper cervical region sufficiently large to produce bilateral symptoms as grave as those existing in this case, like myelitis, would rapidly result in death.

Syringomyelia might, and sometimes does, give rise to most of the symptoms found in the case under discussion. The muscular wasting of the arms and hands, the disturbance in sensation as high as the lower border of the inferior maxillary bone, the paralysis and the increased knee-jerks might be produced by syringomyelia. In syringomyelia the pain is rarely as severe as it was in this case, and is much less influenced, if influenced at all, by movements of the limbs or by changing the positions of the body. In this patient's case the pain was so great,

especially in the arms, as to require repeated injections of morphin to make life tolerable, and movements of the arms or head, thus putting the neck muscles on the stretch, as when turning the patient in bed, could not be made without giving rise to great suffering. In addition to the severity of the pain and the manner in which it was increased, the most important evidence against the existence of syringomyelia was the way in which sensation was affected. Tactile sense was abolished throughout the area of the distribution of the spinal nerves, except over a small surface on the back of the neck above the fourth cervical spine, over the posterior portion of the scalp, and over a small area of the face. Pain sensation, although delayed, was present throughout the entire surface of the body except over the hands and arms. In syringomyelia, pain and temperature sensations are abolished to a greater or less extent, and tactile sense is preserved, often to nearly a normal degree.

Cervical Pachymeningitis.—The character of the initial symptoms, loss of power, incoordination, numb and dead sensations in the hands and arms, without much pain, is decidedly different from that of cervical pachymeningitis, in which pain is the most prominent symptom for some time. Paralysis is not an early symptom in meningitis, neither does it become absolute until just before death. Besides, a pachymeningitis causing anesthesia throughout the distribution of all the spinal nerves would be incompatible with life.

Pressure Myelitis from some cause seemed to be the only lesion that would account for the symptoms. Was the pressure due to caries or tumor of the vertebræ, or to tumor of the membranes?

Caries of the Cervical Vertebræ, with deformity and pressure upon the cord, may cause sensory and motor paralysis, but under such circumstances there will be spinal tenderness, rigidity of the neck muscles, and deformity of the spine. Muscular rigidity was present in the case under discussion, but there was no spinal tenderness, and all deformity was absent; in fact, one of the most common symptoms of caries of the cervical spines—thickening of the tissues over the spine—was absent.

Tumor of the Cervical Vertebræ is attended by great pain on movement of the head, and all the symptoms of caries of the bones would be present in an aggravated form, especially the spinal tenderness. After a careful study of the history of the case, so far as it could be obtained, together with an analysis of the symptoms, I felt confident in excluding all lesions except tumor of the membranes, especially of the dura.

Tumor of the Membranes usually gives rise to motor symptoms on the side on which the tumor is located, and to sensory symptoms on the opposite side of the body; but in those cases in which the growth is situated high up in the cervical region, especially if the structures found in the foramen magnum are encroached upon, bilateral motor and sensory symptoms might result from the direct pressure of the tumor upon the cord and by displacement of the cord to the opposite side against the foramen magnum. A tumor located anteriorly or posteriorly to the spinal nerve-roots as they emerge from the cord might

give rise to bilateral sensory and motor symptoms without completely destroying the function of the upper cervical spinal nerve-roots. If, on the other hand, the growth should be situated on one lateral aspect of the cord, so as to directly involve the spinal nerve-roots on that side, bilateral symptoms would result in the cord below the site of the tumor on account of the direct pressure of the tumor against the cord and the displacement of the cord to the opposite side against the foramen magnum, but nerve-root symptoms on a level with the tumor would be more extensive on the side corresponding to that on which the tumor is located. As this difference of spinal nerve-root symptoms between the two sides was absent in this case, the tumor was thought to be situated anteriorly or posteriorly to the spinal nerve-roots.

Could all the symptoms present in this case be accounted for by the presence of a growth in the upper cervical region in the vicinity of the foramen magnum? Neither severe spinal tenderness nor deformity would result from a tumor in this situation, but muscular rigidity, paralysis, and loss of sensation would be likely to occur. These phenomena correspond with the symptoms found in the case here reported.

Location of the Tumor.—This patient had nearly normal sensation throughout the distribution of the cutaneous branches of the great and small occipital nerves and the great auricular branches of the cervical plexus. Tactile sense over the upper posterior portion of the neck, over the posterior portion of the scalp as far forward as the vertex, over the posterior surfaces of the pinnae of the ears, and over the face just in front of and below the ears, is supplied by the first, second, and third cervical nerves. The lateral and anterior surfaces of the neck derive their cutaneous nerve-supply from the superficial branches of the cervical plexus, which is composed of nerve-filaments from the second and third cervical nerves. It will be observed that the function of the first cervical nerve was nearly intact, but that of the second and third cervical nerves was destroyed, so far as the superficial cervical filaments were concerned. Over the upper posterior portion of the neck and over the scalp both sensory and motor function were preserved to a fair degree. The muscles of the ears supplied by the upper cervical nerves moved freely. It was evident that the tumor was connected with the membranes, probably the dura, and was situated sufficiently high in the spinal canal to cause bilateral symptoms by displacement of the cord against the sharp edges of the foramen magnum. That it extended through the foramen magnum could not be determined.

Dr. McNaught accepted my diagnosis, and said that he would operate if I urged it, but he thought the man was too weak to undergo a severe operation. To this I entirely agreed, as the chances were that the patient would die on the table during the operation. He was extremely weak, greatly emaciated, took but little food, and had to be kept under the influence of morphin most of the time. He gradually sank, and died on April 1st—about four weeks after the examination.

Sectio Cadaveris, four hours after death. We were limited by the friends in our *post-mortem* examination to

the spinal column and the cord and its membranes. No tumor, caries, or displacement of the bones was found. On exposing the dura from the sacral region to the foramen magnum, its external surface appeared normal, but at its extreme upper portion, at the foramen magnum, and extending an inch or more below, it was greatly distended. On opening the dura throughout its entire exposed posterior surface, a growth as seen in Fig. 2 was exposed.

The tumor was lobulated in character, seemed quite firm, lay on the right posterolateral surface of the cord, and was attached to the inner surface of the dura over an area about one-fourth of an inch in diameter. It extended from the fourth cervical nerve-root through the foramen magnum just into the cavity of the cranium. In size it was $1\frac{3}{4}$ inches in length by three-quarters of an inch in its greatest diameter, which was found to be just below the

FIG. 2.



Showing the tumor and cord *in situ* after removal of the laminae, spinous processes, and posterior surface of the dura.

foramen magnum. The end of the tumor that extended into the cranial cavity was rather small and conical in shape. The membranes of the cord seemed to be normal except at the point of attachment of the growth, where the inner surface of the dura was a little thickened. The medulla was cut across just above the tumor, which was a little below the calamus scriptorius, and the cord was carefully removed from the canal. It was found that the cord had two indentations, one on the side of the growth extending from the fourth cervical nerve-root to the second, with the greatest depression opposite the third cervical nerve-root, the other on the left side, and a little more anteriorly than that of the right side.¹ The depression on the left side of the cord was caused by the displacement of the cord against the foramen magnum. The displacement of the cord was upward and to the left, so that the great indentation was on a level with that of the right

¹ The nerve-roots had not been directly pressed upon by the tumor or edge of the foramen magnum.

side, or at a point corresponding to the third cervical nerve. On marking the cord into sections about three-quarters of an inch in length, by incompletely cutting across its substance, the upper cervical portion seemed narrow and softened.

The cord and tumor were placed in Müller's fluid, and the fluid changed twice each day for four days. At the end of this time the specimens were put in a five-per-cent. solution of formalin and kept thus for three weeks. The microscopic examination of the specimens was made by Dr. E. R. Axtell, pathologist to the Hospital, and is as follows:

Sections were made of the tumor and of the spinal cord at the level of the first, second, third, and fourth cervical segments; at the mid-dorsal region, and across the lumbar and sacral regions. The tumor sections were stained in alum-carmin and in hematoxylin; the cord sections by Weigert's method.

Examination of the tumor sections shows the mass to be a spindle-celled sarcoma. The cells are arranged largely in rotating groups, and in several parts hyalin masses are seen similar in all respects to those found in psammomata. The tumor has almost no capsule and contains but very little delicate embryonic stroma. The blood-vessels, while not numerous, are fairly well developed, being more than simple embryonic vessels.

The microscopic examination of the first cervical segment shows the right half to be preserved, with the exception of some disintegration posterior to the gray commissure, while the left half is so softened and disintegrated that sections cannot be made, except through the left posterior and left anterior columns. The left posterior gray cornu is seen passing through the disintegrated area. The brunt of the inflammatory process seems to have been posteriorly and to the left. All of the tissues remaining here present evidences of inflammation with degeneration, increased interstitial tissue, destroyed nerve-fibers, thickened blood-vessel walls, and granular debris. The right half of this segment also presents evidences of inflammation, but to a less degree than the left side.

The entire left side of the second cervical segment is disintegrated except the left anterior column and a thin border along the posterior median fissure, a thread of white matter occupying the place of the lateral columns. All of these portions present the signs of inflammation as detailed above. The right side of this section is preserved, with the exception of the lateral columns and the sensory tract of Gowers, all of which are, however, infiltrated with blood elements.

The right side of the third cervical segment can be sectioned if thick sections are made. Under the microscope is seen a mass of nerve filaments and inflammatory edematous tissue in which no distinction can be made between the gray and white matter. The margin of this right half is very soft and quickly becomes detached from the rest of the section. Under the microscope it is seen to be badly degenerated. The left half of this portion of the cord could not be sectioned by any manipulation, being absolutely and completely disintegrated. Some of the

softened material was teased, and under the microscope abundant masses of granule corpuscle, debris, myelin masses and many corpora amylacea were found. In the tissues of this section that did remain, there is evidence of an increase in the interstitial tissue with an increase in the thickness of the blood-vessel walls.

In the fourth cervical segment, there is no absolute disintegration, but the inflammatory process of the third segment extends to this segment, and especially affects the posterior medium and external columns and to a slighter degree the posterior lateral columns.

The mid-dorsal segment shows a normal cord with the exception of degeneration of some fibers in the anterior and lateral columns.

The lumbar segment shows a normal cord, with the exception of slight sclerosis in the left lateral column.

The sacral segment is normal or nearly so.

There are several points of interest connected with the clinical history and pathologic findings in the case reported in this paper. I shall only briefly refer to a few of them at this time. The macroscopic and microscopic appearance of the upper portion of the cord showed that greater damage had been done to that side of the cord opposite to the seat of the growth. Dr. F. W. Langdon of Cincinnati in *Brain*, 1895, vol. XV., p. 551 reported a case of "Multiple Tumors of the Brain; Fibrocystoma of the Pons and Cerebellum, and Multiple Fibropssammomata of the Dura, Pia, Arachnoid and Cortex Cerebri," in which the symptoms indicated that the lesion of the pons was on the side opposite to that of the tumor. It appears, then, that tumors in the neighborhood of the foramen magnum, so situated as to cause displacement of the parts against the bone, may give rise to a greater lesion by indirect than by direct pressure. This is important to bear in mind in tumors above the foramen magnum, but is of less value in growths below the foramen magnum, even should an operation for the removal of the tumor be undertaken.

The position of the tumor and its slender attachment to the inner surface of the dura would have made it a comparatively easy matter to remove the growth in the case of my patient had he been seen early, or before he became so extremely weak.

The microscopic examination shows that the third cervical segment was almost completely destroyed, but that the first and second cervical segments were greatly damaged, especially on the left side. It is probable that considerable destruction of the cervical cord took place after I made a careful examination of the patient's condition, some weeks prior to his death.

From the macroscopic appearances of the cord, it seems evident that the third cervical segment must have been destroyed by compression and by subsequent inflammation. It appears, then, that the first and second cervical segments supply with tactile sense the posterior portion of the scalp, a narrow strip on the posterior portion of the neck as low down as the fourth spinal process, and the face in front of and below each ear.

Dr. M. Allen Starr¹ gives the second and third cervical

¹ "Familiar Forms of Nervous Diseases," p. 128.

segments as supplying sensation to the posterior portion of the scalp and the neck. It is probable that the third cervical segment has nothing to do with supplying sensation to the scalp and posterior portion of the neck, but that it mainly affords sensation to the lateral and anterior surfaces of the neck.

NEW INSTRUMENT.

IMPROVED HYPODERMIC SYRINGE.

By A. C. BARNES, M.D.,
OF PHILADELPHIA.

EVERY physician who has experienced the bother attendant upon the use of the ordinary hypodermic syringe will appreciate the points of excellence possessed by the syringe illustrated in the accompanying cut. The syringe



Mulford's Improved Hypodermic Syringe.

itself, by means of the improved piston and vulcanized rubber packing, permits of instantaneous adjustment so that by a few turns of the end of the piston the packing is brought in immediate contact with the barrel proper of the syringe, and is thereby always ready for immediate use. The syringe needle-holder and the eight vials for tablets fit by means of metal catches upon two aluminum trays which may be removed from the case and sterilized. The case is curved so as to conform to the shape of the body when carried in the vest pocket. The syringe and case is made by the H. K. Mulford Co., Philadelphia.

MEDICAL PROGRESS.

The Disinfection of Large Rooms with Formalin.—ARONSON (*Zeitschr. f. Hygiene und Infektionskrank.*, June, 1897) describes the different attempts which have been made to utilize formaldehyde gas in the disinfection of rooms. Owing to its powerful germicidal action and to the fact that it injures neither metals nor fabrics, it seemed to be the ideal disinfectant. Attempts were first made to diffuse it by heating commercial solutions of formalin.

This method proved to be an impossible one, because as soon as the concentration of the solution exceeds forty per cent. a polymerization of the formalin occurs, with a precipitation of paraformaldehyde, and if the heating is continued this finally begins to burn. It was next attempted to obtain the gas from a solution of formalin in methyl spirit called holzin. This solution spatters badly, and not only is much costly alcohol wasted, but it is not possible to develop large quantities of formaldehyde vapor in a short space of time—a factor which is absolutely necessary for efficient disinfection. Attempts have also been made to develop the vapor by the oxidation of methyl alcohol in lamps, but as aldehyde forms only a small percentage of methyl alcohol, this method is both costly and wasteful, and a large number of lamps are required to disinfect even a small room. Good results in disinfection were first obtained by means of an apparatus in which formaldehyde solutions were superheated under a pressure of three atmospheres. This is necessarily expensive, and its use is attended with a certain amount of risk. Recently Schering has constructed an apparatus in which the solid polymerized formalin or paraform, called also tryoxymethylin, is used for the development of the formalin vapor. It consists of a cylindrical mantel, beneath which is a spirit-lamp with a suitable wick. In the upper part of the mantel hangs a vessel, into which the formalin pastiles are placed. The upper end of the vessel is provided with a number of slits, through which the gases formed by the combustion of the alcohol—carbonic acid and watery vapor—must escape. In their passage through the vessel there is a mixture of these vapors of combustion with the formalin vapors generated by the heating of the formalin pastiles. In such an apparatus from 100 to 150 pastiles, each weighing 15 grains, may be vaporized at once. This is sufficient, as careful experiments have shown that a room containing 3500 cubic feet of air space may be absolutely sterilized.

Suppurative Typhlitis and a Normal Appendix.—In the *Revue de Medecin*, August, 1897, LOP gives the details of a case of suppurative inflammation of the cecum with perforation at its external border, although the appendix was perfectly normal. An artificial anus was established, and after a convalescence, prolonged by hemorrhages from the wound and by pneumonia of the left lung, the patient's condition was greatly improved. Six weeks later the patient died from the effects of an operation which became necessary to relieve a stricture of the intestine near the site of the old wound.

Substitutes for Phenacetin and Antifebrin.—VAMOSSY and FENYVESSY (*Therapeut. Monats.*, August, 1897), who have experimented with two new drugs, called phesin and cosaprin, draw the following conclusions: Both possess certain advantages over phenacetin and antifebrin, from which they are derived. They are easily soluble in water, and may therefore be given subcutaneously; they act quickly; they are less dangerous than the preparations from which they are derived; their action continues only a short time, but this may be overcome by the repeated administration of small doses.

The Best Liquid for Use as an Injection in Young Infants.—

MERCIER (*Medical Week*, August 20, 1897) recommends for use as an injection in young infants, in place of the boric-acid solution, plain water, or normal salt solution commonly employed for this purpose, a saturated solution of naphthol. This substance is sparingly soluble in water, about 3 grains to the quart. The addition of borax increases its solubility, so that 15 grains may be dissolved in a quart of water.

To Detect Minute Quantities of Liquid in the Knee-joint.—

An English army surgeon, DUER, recommends (*Med. Week*, August 20, 1897) the following method of exploration, which he has always found successful: The knee is slightly flexed and laid on its outer side so that the inner side is well in view; the operator then applies firm pressure with his hand directly over the patella. Should the joint contain any liquid, the skin on the inner border of the patella will undergo a manifest degree of expansion. In this way it is possible to ascertain the existence of an articular effusion when fluctuation is not apparent.

Exophthalmic Goiter Treated by Resection of the Two Cervical Sympathetics.—GERARD-MARCHANT (*La Presse Médicale*, July 3, 1897) treated a patient with exophthalmic goiter by resection of the inferior portion of the right and left superior cervical ganglia with about two inches of the nerves, an improvement in the eye condition was noticeable almost immediately, and this increased until the exophthalmos was very slight indeed. The pulse decreased from 80 to 100 to a constant rate of 80.

In the same number of this Journal, CHAUFFARD mentions a similar case occurring in a man. Quenu performed a bilateral operation as above described. The immediate results were scarcely noticeable. Two and a half months later an attack of tachycardia came on, and the patient was given a bottle of digitalis with instructions regarding its use. He took nearly the whole contents of the bottle, and died some hours later of acute digitalism. However, he lived long enough to demonstrate the failure of the operation.

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A Genital Symptom of Renal Calculus.—ABRAHAMS (*New York Med. Jour.*, Sept. 11, 1897) calls attention to a premonitory symptom of renal calculus which he has observed in four adults, two men and two women. The men consulted him for tenderness, pain and swelling of one testicle. In the women one ovary was similarly affected. At the end of from four to fourteen days after the beginning of the attack these individuals all suffered from renal colic on the affected side, passed a calculus and recovered. The tenderness and swelling of the affected ovary or testicle quickly disappeared.

Round Shoulders.—In the *Boston Medical and Surgical Journal* for September 9, 1897, BRADFORD published an illustrated article upon the round shoulders frequently observed in growing boys and girls, and occasionally in weak adults. The scapulæ drop forward, the posterior edges projecting behind. The neck is thrown forward, and there is an unusual hollow in the small of the back. This is notably increased if the patient while standing

erect is directed to extend both arms in a vertical direction. Bradford considers that the cause of this condition is a faulty arrangement of the clothing. For the sake of convenience, and owing to an exaggerated fear of injury to the pelvis, the skirts and often the stockings of children are fastened to a dress waist. These waists usually have a narrow shoulder strap, which presses upon the trapezius muscle. To avoid this pressure the head and shoulders of a child are dropped forward.

The treatment of this condition is long and somewhat tedious. Its prevention is more important than its cure. As far as possible, the weight of the underwear should be borne by the hips, while the waist should be so constructed as to make no pressure upon the sternum, and where any weight is thrown upon the shoulders, it should be a force which pulls them backward and not forward.

Cysts of the Vermiform Appendix.—MONTGOMERY (*Jour. Amer. Med. Assn.*, July 24, 1897) reports a cyst of the vermiform appendix which was $5\frac{1}{2}$ inches long and about four inches in circumference, and contained a watery fluid. The patient was a woman, aged fifty-two years, upon whom panhysterectomy was performed for multiple uterine growths. The cyst of the appendix was accidentally discovered and was removed. The patient recovered. A number of cases of cysts of the appendix have been placed on record, but most of them have been of small size.

THERAPEUTIC NOTES.

The Medical Treatment of Toothache.—COLEY gives in September number of the *Practitioner* some prescriptions for the treatment of toothache which he has found reliable. He rejects the use of narcotics as not being directly applicable to the seat of pain. More efficacious is the insertion into the cavity of the tooth of a bit of absorbent cotton soaked in a mixture consisting of equal parts of pure carbolic acid and water. A bit of dry cotton should be placed over the moist. The pain ceases usually in a few minutes; if it recurs a few hours later, the treatment should be repeated. Attention is apt to be called to the existence of any decayed teeth by an attack of dental neuralgia. The following prescription may be given with benefit:

R	Quin. sulph.	.	.	.	.	.	gr. ii
	Acid hydrobrom.	.	.	.	.	.	m xv
	Tr. gelsem.	.	.	.	.	.	m xv
	Syrup	.	.	.	.	.	3 iss
	Aquæ,	.	.	.	.	.	3 j.

M. Sig. Twice daily.

A toothache which comes on after eating, and due to excess of acidity, may be relieved with astonishing rapidity by the administration of an alkali. A Seidlitz powder minus one-quarter of the acid fulfils the requirements. Salicylate of soda is at times a most valuable internal remedy for this distressing malady. Fifteen grains repeated, if necessary, every four hours will relieve the pain caused by the inflammatory products surrounding a tooth.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

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SATURDAY, SEPTEMBER 25, 1897.

OUR COUSINS IN SESSION.

WE have recently had presented the unique spectacle of a meeting of the great national association of our brethren of the Mother Country upon this continent and within a few score miles of our own border; and a brief and informal comparison between it and one of our own gatherings is not without interest.

The first and most permanent impression made upon the observer was the striking similarity between the two, for there was absolutely nothing in the character or appearance of the members of the British Association, the conduct of or attendance at the meetings, the value of the papers read, or the tone of the discussions to make one realize that one was not attending a session of our own Congress of Physicians and Surgeons, for instance, except, of course, the thumb-prints of the British tailor and the broad and beautiful British accent, which were always in evidence. And yet neither association is modeled upon the form of the other; it is simply the common blood and requirements causing the development of practically identical institutions.

There were, however, a few differences in details,

and one apparently in mental attitude which are worth noting. In the first place, there was a refreshing absence from the program of such papers as "The Tomato-Heart," "Results with Ergot in Two Thousand Successive Cases of Labor," "My Last Hundred Ovariectomies," etc., etc., and likewise an absence from the meetings of individuals who looked capable of writing them. This may have been due in some measure to the greater scarcity of the breed, but chiefly, we think, to the fact that the officers of each section formed an actual, instead of merely nominal, board of censors, and exercised their power in the judging of papers submitted without fear or favor. It would be greatly to the benefit in every way of our own long-suffering Sections, with their overcrowded and oftentimes disfigured programs, if the identical executive mechanism could be galvanized into vigorous action.

Another commendable feature, which was of great convenience to those desirous of listening to the reading of the papers in which they were especially interested in the several Sections was the hanging outside the door of each room of a tablet, upon which was written by the doorkeeper the title of the paper under discussion and the name of the member discussing it. The title of each paper and names of speakers, as each rose, were also written upon a black-board in each Section-room itself, so that one had not to depend upon the chairman's muttered recognition of "Dr. So-and-So," or the latter's more diffident self-introduction, in order to determine his identity. Both of these practices are in use in a few of the Sections of our own medical bodies, but they add so greatly to the convenience and enjoyment of a discussion that they deserve a much wider vogue.

The most decided difference between the sister organizations, however, was not one of form, but of spirit, subtle but distinct, and perhaps may best be described as that of mental attitude toward the powers that be. The member of the British Medical Association as an individual, as well as the Association as a whole, is, first of all, British, and, secondly, medical, which, in spite of all that has been said, and with some truth, about the patriotism and pride in existing institutions, is not true *mutatis mutandis* of his American brother or his professional organizations. The whole atmosphere of the meetings, outside of the Sections, was fairly surcharged with pa-

triotism, and the allusions which evoked the surest and most frequent applause were those referring to the Queen and her Jubilee, the Mother Country, and the future glories of Canada. There was nothing forced or perfunctory about it; the feeling was simply there and was irrepressible, and so spontaneous was it that it became infectious, and the guests from the United States found themselves joining in its manifestations with a heartiness which surprised them, partly, no doubt, out of courtesy and cordial sympathy with the success of their kinsfolk, but more deeply and strongly from a feeling, which rose unbidden and often unexpectedly, that they had the blood-right to glory in the large share of this which represented the achievements of a common ancestry; and this feeling was cordially reciprocated by our British and Canadian brethren. These demonstrations of patriotism were not simply to impress us with their loyalty—least of all to make us feel that this was the meeting of a British organization and we aliens, for there was the ever-present feeling that “we be of one blood, you and I,” and that we should unite in being proud of the glories of our common family.

One matter of significant interest, as demonstrating the permanent existing basis of this patriotic enthusiasm and the practical evidence of its application, is the fact that at least six or seven of the twelve hundred or so medical men present are members of one of the Houses of Parliament, either British or Canadian. Our cousins across the water and on the other side of the boundary line are alive to the value of such representation, and show it. Roll all of our medical associations and congresses together and not one member of either national House can be pointed out, to our shame be it spoken. Such a condition of affairs is a discredit to the public spirit of our profession and a very serious disadvantage to the community. The sole honor of representing in Congress the many who practice medicine, with perhaps one partial exception, belongs to a homeopathic physician from New Hampshire, of whose competence and intelligence an idea may be gained when it is remembered that he is the official father of the fanatical and ignorant bill against vivisection which was introduced during the last session. More patriotism of the British sort would redound to our advantage and credit.

The sixty-fifth annual meeting of the British Medical Association is a thing of the past, and will long be remembered. The next time it comes to these shores the American brotherhood will again join its Canadian neighbors in extending the same hearty welcome. *Vale!*

ECHOES AND NEWS.

British Medical Association.—The next annual meeting of this Association will be held in Edinburgh, July 26, 27, 28, and 29, 1898, Sir Thomas Grainger Stewart presiding.

New York State Association of Railway Surgeons.—The seventh annual meeting of this association will be held at the Academy of Medicine, New York city, on Tuesday, November 16, 1897. C. B. Herrick, M.D., Troy, N. Y., secretary.

Dr. Stephen Smith Appointed Commissioner of Charities.—Dr. Stephen Smith of New York has been appointed Commissioner of Charities by Mayor Strong to fill the vacancy occasioned by the resignation of Silas C. Croft, who has been appointed Surveyor of the Port by President McKinley.

American Academy of Railway Surgeons.—The fourth annual meeting of this Association will be held in the Auditorium Hotel, Chicago, October 6, 7, and 8, 1897. The preliminary program promises a most instructive and entertaining meeting. D. C. Bryant, M.D., Omaha, Neb., secretary.

American Public Health Association.—The coming meeting of this Association in Philadelphia on October 26 to 29, 1897, will be the silver anniversary of this Society. An interesting feature of the meeting will be an exhibit of hygienic and sanitary appliances, preparations, etc., including all articles capable of furthering or preserving public or personal health. Dr. Irving A. Watson, Concord, N. H., secretary.

Cancer in the Imperial Family of Germany.—The sad case of the late Emperor Frederick, whose patient endurance of a laryngeal carcinoma gained for him the distinguishing title of “The Noble,” is fresh in the minds of all. It now appears that his brother-in-law, the Grand Duke of Baden, is suffering from a similar malignant disease. His condition is so critical that he is at present confined to his home in the Black Forest.

Antisepsis of the Barber-shop.—Paris barbers and hairdressers are now obliged in accordance with police regulations to employ sanitary measures in carrying on their business. They are required to use only nickel-plated combs, to substitute pulverizers for powder-puffs, to cover the hair cut off with sawdust, and have it promptly removed, and to place all metal instruments, razors, shears, combs, clippers, etc., in a sterilizer for ten minutes before they are used.

Ether as an Intoxicant.—The habit of drinking ether for its exhilarating and intoxicating effects is said to be very prevalent in London and among the peasants of Ireland. That it is cheaper than alcohol, more rapid in its effect, and more delightfully exciting before the stage of unconsciousness is reached recommends it to these degraded devotees. The dangers of its use are very great, and with a fuller knowledge of this growing evil, many deaths from obscure causes may in future be correctly assigned to ether as a beverage.

The Effect of Counter-Irritation of the Skin.—Kronecker and Marti, writing in the *Atti dei Lincei*, give the result of a series of investigations on the effect of cutaneous excitation on the formation of red blood-corpuscles. They conclude: (1) Slight irritations of the skin promote the formation of red blood-corpuscles but modify the formation of hemoglobin in different ways. (2) Strong irritations of the skin determine a diminution of the number of red corpuscles and also of the hemoglobin contained in the blood. (3) Darkness diminishes the number of blood-cells for about two weeks, after which a slight increase is noticed. (4) Continued exposure to intense light—even at night to electric light—induces the formation of red blood-corpuscles and also of hemoglobin.

American Medical Students in France.—It is announced that hereafter the medical schools of France will be open to foreign students, as are those of Germany. On July 9th the *Conseil Supérieur de l'Instruction Publique*, at a meeting held in Paris, decided upon this reform, and determined upon the character of the degree which shall be issued to this class of students. The new degree will be called the Doctorate-Universitaire, and will be issued by the universities directly, instead of by the State, as are the regular degrees of the French schools. The announcement does not declare positively whether this entitles the recipient to practise in France or not. M. Henri Breal, 70 Rue d'Arras, Paris, can furnish to students specific information regarding the requirements and the degree.

To Keep the Feet Warm.—Cork soles have long been employed to keep the feet dry, and more recently an American invention has been adjusted to the sole of shoes to maintain proper ventilation and keep the feet cool. Now a German near Dresden has devised a kind of heatable shoe to keep the feet warm. Within the heel of the shoe, which is adequately hollowed out for the purpose, is a receptacle for a glowing substance similar to that which is used in the well-known Japanese hand-warmers. Between the soles of the shoe, embedded in asbestos, is placed a rubber bag which is filled with water. A system of circulation of the water around the glowing substance in the heel is provided for by which the water is maintained at a proper temperature, the current being produced by the varying positions and pressure of the foot while walking. The warmth given by this arrangement is said to never rise above 70° F. and will last about eight hours. The soles are slightly heavier than the common sort but not much thicker than that of the ordinary wet-weather shoe.

Smokeless Powder and Expanding Bullets.—The deadly effect of firearms is being steadily increased by the constant improvements which are being made. The *Scientific American* says that the deadly effect upon game of small, metal-covered, expanding bullets with high velocity smokeless powder, has been recently satisfactorily demonstrated. Modern weapons possess several advantages over the old large calibers in flatness of trajectory, absence of smoke, long range, increased penetration, high velocity, less recoil, and light-weight ammunition. The expanding bullet produces invariably an area of laceration greater than ever effected by any projectile before used. Without calculating the effect of the nervous shock, extensive splintering of bone and laceration of tissue are produced. The secret of the deadly effect of these small projectiles lies in their expanding qualities and extraordinarily high velocity resulting from the use of smokeless powder, which is only possible when confined by small calibers. These facts are of interest not only to the members of the profession who are notorious Nimrods, when in search of large game, but are of immense practical value to the army and navy surgeon.

The Officiousness of Ambulance-Surgeons.—Probably no subordinate official feels his importance more or asserts his authority as much as the average ambulance-surgeon. Accidents are, of course, every-day occurrences to him, and wounds and injuries are his delight. A New York physician narrates an amusing experience of his, as follows: Happening in a pharmacy, he discovered a man lying upon the floor, a crowd around him, and an ambulance surgeon bustling in and out. The man had sustained a double fracture below the knee. Upon inquiring of the bustling surgeon what the case was, that young man flippantly replied, "Oh, simple fracture of the 'fib' and 'tib.'" Would you like the case?" The case of a somewhat glaring breach of etiquette and decency on the part of an ambulance-surgeon comes from a hospital in Williamsburg, L. I. Upon being called to a mechanic who had fallen from a lofty building, the ambulance-surgeon was requested not to molest the patient, as he was unconscious, until a priest who had been summoned could arrive. Whereupon the ambulance-surgeon is alleged to have said, "To h— with the priest. Let me get to work on the man," and hustled him off to the hospital. The ambulance-surgeon has been suspended awaiting investigation by the president of the hospital.

Health Reports.—The following statistics concerning cholera, plague, smallpox, and yellow fever have been received in the office of the United States Marine Hospital Service during the week ended September 18, 1897:

CHOLERA.

Cases. Deaths.

Bombay, India.....	August 10 to 17.....	..	143
Calcutta, India.....	August 1 to 7.....	..	8
Osaka and Hiogo, Japan..	July 31 to August 7.....	..	1

PLAGUE.

Bombay, India.....	August 10 to 17.....	..	21
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SMALLPOX—UNITED STATES.

Birmingham, Ala.....	September 6 to 13.....	7	..
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SMALLPOX—FOREIGN.

Cases. Deaths.

Bombay, India.....	August 3 to 10.....	1	..
Madras, India.....	July 31 to August 6.....	2	..
" ".....	August 7 to 13.....	9	..
Madrid, Spain.....	August 24 to 31.....	3	..
Para, Brazil.....	August 21 to 28.....	1	..
Pernambuco, Brazil.....	June 26 to July 3.....	1	..
" ".....	July 24 to 31.....	1	..
Sagua la Grande, Cuba...	August 18 to September 4 ..	1	..
St. Petersburg, Russia.....	August 21 to 28.....	7	..
Warsaw, Russia.....	August 15 to 21.....	8	..

YELLOW FEVER—UNITED STATES.

Mobile, Ala.....	September 13.....	1	..
" ".....	September 14.....	2	..
" ".....	September 17.....	2	2
New Orleans, La.....	September 8.....	1	1
" ".....	September 12.....	7	..
" ".....	September 13.....	3	..
" ".....	September 14.....	5	..
" ".....	September 15.....	2	..
" ".....	September 16.....	2	..
" ".....	September 17.....	9	1
Barklay, Miss.....	September 13.....	8	4
" ".....	September 14.....	1	..
Biloxi, ".....	September 16.....	15	1
Edwards, ".....	September 15.....	12	1
Ocean Springs, ".....	September 6.....	4	2
" ".....	September 13.....	1	..
" ".....	September 17.....	3	..
Pascagoula, ".....	September 10.....	1	..
" ".....	September 14.....	1	..
Perkinston, ".....	September 10.....	1	..

YELLOW FEVER—FOREIGN.

Cienfuegos, Cuba.....	August 30 to September 5 ..	6	..
Kingston, Jamaica.....	August 22 to 23.....	1	..

CORRESPONDENCE.

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

[From our Special Correspondent.]

MOSCOW, August 25, 1897.

THE Congress is drawing to a close. The ball at the Nobles' club was delightful notwithstanding the crowd present. The Russians danced their national dances with a gusto which was remarkable, considering that most of them were at least middle-aged, and supposed to be staid physicians. To the Westerner who finds at home a succession of waltzes on the ball program with an occasional two-step, it was a relief to find there is a place where they dance something else. The reception by the ladies' committee this evening was another pleasant reunion which showed Russian hospitality at its best. Everyone votes the social side of the Congress a success.

As to the interesting features which were striking enough to keep a place in the memory, some were new, and some only put in a novel way. After all not every communication at an international congress of medicine represents a distinct advance along some line, and some of them are drearily familiar. The report on the surgery of the lungs and its discussion brought out very clearly the fact that the thoracic cavity is no longer a sealed chamber to the surgeon whose sacred precincts he dare not invade or only at the sacrifice of a human victim to the tutelary deity of surgery. The French surgeons have arranged an en-

tirely new branch of surgery for the lungs, but while it sounds all very fine and some of it supported by reports of successful cases, it is apt to strike one, as yet, as too theoretically complete to be thoroughly practical. Professor MacEwen's simple report, in a few words which took scarcely ten minutes, of what he has done for tuberculous cavities and the results of surgical interference, was extremely encouraging in its assurance of absence of serious danger and results which justified the operative risks incurred. It was all so quietly done that few would imagine that it is MacEwen's work in this line which practically broke ground for others; but that in this, as in brain surgery, in which he was also a pioneer, nothing was formally given to the profession until methods and results were sufficiently perfected to at once place the subject in a clear light. During the discussion of appendicitis one could not help but feel that some American surgeons could have suggested valuable points to their European brethren. Gradually the world is coming around to the necessity for operation in a large proportion of what some are still pleased to call perityphlitic cases. Professor Sonenberg of Berlin, and Professor Roux of Lausanne, both represent very advanced ideas as to most of the pathologic processes of the right iliac fossa, being surgical in their leanings rather than medical, and the general trend of thought as it came out in the discussion of their papers, shows that gradually the opinions of American surgeons on the subject are being recognized as truly conservative, though for so long they were regarded as almost wildly fantastic.

Professor Czerny's paper on gastro-intestinal surgery for pyloric stricture was a masterly review of the subject, and was listened to with a great deal of attention. One of its most noteworthy points was the announcement that the author had abandoned his own invention, the Czerny-Lembert suture, and in fifty-six cases had used the Murphy-button. He gave as his reasons that it was just as safe and much easier, and that it required much less time, which in the debilitated patients usually presenting for the operation of gastro-intestinal anastomosis is an extremely important point. Finally, feeding may begin much sooner than when suture alone is used. In Czerny's opinion one of the greatest advantages of the Murphy-button is that after its use there is no tendency to cicatricial contraction of the intestinal opening.

A new intestinal coupler, also from Chicago, made very like the Murphy-button but of absorbable material—the invention of Dr. Frank, received considerable attention.

Two papers, one from Cairo, the other from Paris, seemed to show that the contra-indications for lithotripsy are growing more and more limited. Professor Albarran representing the school of Guyon, and Doctor Rolfe, what may be called the Anglo-Indian school of surgeons, reported successful operations on very young children and for extremely large stones. The *débris* of calculi weighing from 200 to 450 grams were exhibited, which had been removed after crushing at a single sitting, and so a great advance in conservative surgery is to have even wider application in the future.

Professor Credé, whose demonstration that silver-wire sutures have an antiseptic action because the metal is acted upon by the tissues and forms in wounds compounds which are powerfully antiseptic, claims to have discovered even a wider application for silver. He uses certain of the more insoluble silver salts internally, and after absorption there is sufficient of the metal in the circulation to produce an antiseptic action. For abscesses and especially for erysipelas the results of this general antiseptis have been most favorable, and it is expected to be of the greatest service in septic wounds where the absorption of toxic agents is going on and pyemia is threatened.

In Pott's disease the discussion of the papers presented brought out very clearly the fact that most orthopedists, in recent cases at least, believe in forcible, immediate reduction, and then mechanical retention in the corrected position until healing occurs. Healing does not take longer than if the disease were allowed to run its course in a plaster jacket or with absolute immobilization in bed, and the resulting deformity is much lessened. These are not the opinions of a few men but of all the orthopedic surgeons present.

The discussion of the surgery of brain tumors must have been encouraging and consoling to those who have sometimes trephined and not found the expected tumor, and possibly found one that despite the absolutely limited localizing symptoms it gave was entirely inoperable. One set of statistics showed that about once in ten operations for brain tumor no tumor is found and once in six times the tumor is inoperable. The discussion made clear the fact that only the most absolutely classic localizing symptoms can be depended upon for a diagnosis of brain tumor and even these only in special regions. Certain nervous fibers are, by personal idiosyncrasy, so much more resistant than others that they communicate pressure to parts beyond them and do not suffer from it themselves, thus producing simulation of localizing symptoms at a distance from the lesion.

Another thing which this discussion brought out was that surgeons, owing to the more or less uncertainty of diagnosis in so many cases, are making larger openings in the skull. Doyen of Paris, for instance, believes in a temporary craniectomy in every case, and suggests that the operation carries with it, in these days of aseptic surgery, so little risk that in serious cases it may be done for diagnostic purposes, and that an exploratory craniectomy is as justifiable as an exploratory laparotomy.

Professor Kacher of Berne, after a series of operations for exophthalmic goiter, says that in its early stage it is properly a surgical disease, and may be relieved by surgical means. His theory is that the symptoms are due to oversecretion of the thyroid. To decrease this he removes one-half the gland and ties one of the main arteries—the inferior or superior on the remaining side. At an early stage of the disease the operation is not difficult, and he considers that the employment of useless medication for months and then transferring the case to the surgeon is unjustifiable as the disease is more properly a surgical one from the beginning.

The old principle that fractures must be immediately immobilized and then kept absolutely quiet until the healing process is completed received some serious blows. Dr. Lucas Champonniere of Paris has been treating all fractures for years practically without apparatus and with immediate massage and passive movements. He has obtained particularly satisfactory results in fractures of the upper and lower end of the humerus, those around the elbow and in fractures of the clavicle—the fractures for which the most varied apparatus have been invented, the greatest care in absolute immobilization taken and in which notwithstanding it all the results have, as a rule, been anything but satisfactory. Dr. Champonniere and his ideas were confirmed by others who use only the simplest forms of temporary bandage. By this treatment Dr. Champonniere has obtained in the short period of three weeks solid union without noticeable deformity.

Some of the best Roentgen-ray pictures of the hand exhibited in the surgical section of the Congress were taken without the use of a Ruhmkorff coil. An ordinary two-plate Wimshurst static electric machine, with a Leyden jar in the circuit, had been used to produce the X-rays. The result was so good that some of the histologic details of the bones were clearly developed. With slight changes the same means may be used for a radioscopic work, and it would seem as though some simpler and less expensive, also less technical means of producing these now so much valued pictures may result from further experimentation.

TRANSACTIONS OF FOREIGN SOCIETIES.

The Seventh Congress of German Gynecologists was held at Leipsic June 9 to 11, 1897.

SCHULTZE gave as the *causes of retroversion and retroflexion of the uterus*:

1. The relaxation of the supporting apparatus of the uterus, principally the retractor uteri of Luschka, the muscles in front of the broad ligament, the round ligaments, and the fasciæ. This relaxation may be due to (a) pregnancy and the puerperal state; (b) posterior parametritis in the course of absorption; (c) habitual state of repletion of the rectum; (d) prolonged dorsal decubitus, and especially the action of the abdominal pressure in this position.

2. Fixation of the cervix in a more anterior position than normal: (a) by cicatricial bands resulting from anterior parametritis; (b) by bands arising from extensive lacerations of the neck of the uterus, or supervening after bilateral notching or other operations, performed on the uterus without necessary aseptic precautions; (c) by cicatricial bands due to loss of substance by gangrene in front of the cervix or to the existence of vesicovaginal or vesico-uterine fistulæ.

3. Abnormal shortness of the vagina, more especially its anterior wall: (a) as a result of arrest of development in childhood; (b) as a result of senile atrophy.

4. Habitual state of fulness or extreme distention of the bladder.

5. Distention of the vulva, and laceration of the perineum.

These five etiologic conditions are the most frequent. If several of them coexist, their action is naturally increased. Other less important causes are abnormal length of the cervix, the presence of a tumor of the uterus or of the cervix, abnormal situation of an ovary or a tumor of the same.

The following prophylactic measures are indicated: Excessive distention of the bladder should be avoided in children and young girls. To avoid parametritis, a light aseptic bandage should be worn during the menstrual period by those predisposed to uterine catarrh. Lacerations of the perineum, however small, should be repaired as soon after delivery as possible, in order to avoid distention of the anterior vaginal wall. Careful attention must be paid to regular evacuations of the bowels during the puerperal state and afterward. If subinvolution of the uterus progresses too slowly, ergot or ergotin should be administered.

The diagnosis of retroflexion is in most cases easily made by manual palpation, but in order to recognize exactly all the complications and especially the obstacles to reduction, anesthesia is desirable.

The non-operative treatment of retroflexion consists in reduction of the displaced organs. If no adhesions are present nor any other complication, a pessary should be at once introduced. Celluloid pessaries are most to be recommended, and their shape ought to be adapted to each particular case. A pessary should never be introduced unless reduction is perfect, a rule which unfortunately is often broken. During the first days the pessary should be carefully watched and changed if it does not accomplish its object. To favor the action of the pessary, and to obtain if possible a permanent cure, cold enemata are to be taken daily after each movement of the bowels and ergot during the menstrual flow. In certain cases massage and electricity may be added to the treatment by the pessaries. Although the most favorable results are obtained in recent cases, those of long standing do equally well if the patient has borne a child or has had a miscarriage a short time before commencing treatment.

The most frequent complications are subinvolution of the uterus, metritis, endometritis, and oöphoritis. These complications, if they have not existed too long, often disappear rapidly after reduction of the displacement.

The obstacles to reduction must be carefully made out during narcosis by rectovaginal and abdominal palpation. The obstacles often depend upon a prolapsed ovary, adhesions of the posterior surface of the uterus to intestinal coils or to the rectum, or cicatricial bands occupying the parametrium, the peritoneum or both. If these obstructions cannot be overcome, during narcosis, the abdominal cavity should be opened and the adhesions divided.

OLSHAUSEN spoke of the symptomatology and operative treatment of retroflexion. Many cases give no symptoms for months, but usually there is pain in the lumbar region, headache, a feeling of weight in the stomach and pelvis, difficulty in walking, more or less marked melancholia, constipation and dysmenorrhea,

although a marked degree of the last symptom indicates the presence of complications. In long-standing cases of retroflexion, hemorrhage appears in the form of too abundant or too frequent menstruation. Sterility may result from retroflexion, but is usually caused by the presence of lesions of the adnexa.

Retroflexion is a frequent cause of miscarriage in the second or third month of pregnancy. In most cases, however, pregnancy causes a gradual reduction and thus goes on without interruption to full term. In certain cases there is only a partial reduction of the uterus, and an unreduced diverticulum remains. In such a case miscarriage may be brought about in the sixth, seventh, or eighth month.

Surgical treatment of simple movable or fixed retroversion and retroflexion has of late years been resorted to too readily and injudiciously.

WINTER, from observation made at the Berlin Polyclinic, said that retroflexion exists in about twelve per cent. of all gynecologic cases. In eighty-four per cent. of these the retroflexion exists with complications. The most frequent cause of perimetritis he found to be gonorrhea.

In six years DUHRSEN has performed 281 intraperitoneal vaginofixations, and has seen but six recurrences. Most of these patients had received previous treatment.

WERTHEIM has performed fourteen times for movable and nine times for adherent retroflexion, an operation devised by himself which consists in shortening the round ligaments through the vagina. In only one case was there a recurrence.

MARTIN never operates in cases of simple movable retroflexion. He attaches no importance to anything but complications. In all adherent retroflexions the patient is anesthetized, and the operation selected which best fits the case. Catgut alone is used for sutures.

HOFMEIER, after describing the *varieties of placenta previa*, and their supposed origin, went on to speak of the diagnosis of this condition. The persistence of hemorrhage after the rupture of the membranes raises a suspicion of premature separation, either of a placenta previa or of one which is situated very low in the uterus.

The first indication for treatment is to arrest hemorrhage. For this purpose if the cervix is still closed, the vagina should be thoroughly tamponed with sterile or iodoform gauze. If necessary this can be repeated or kept up for several days. As soon as labor has begun the membranes should be ruptured in order that the descending fetus may press upon the lower uterine segment and so compress the bleeding vessels. From this point many labors progress without further difficulty to a normal termination. In other cases the pains are insufficient and irregular and hemorrhage continues in spite of the escape of the waters. Consequently it is safer to follow the advice of Hicks and to perform internal version at once, and to bring down one foot. This procedure will usually suffice to stop the hemorrhage.

SCHATZ, while admitting that the rupture of the membrane facilitates the pressure of the placenta against the uterine wall, said that this procedure delays the labor

and thus may render dangerous, on account of its long duration, a comparatively small hemorrhage. It should, therefore, never be performed except when the head is ready to engage, or when the cervix is sufficiently dilated to permit of internal podalic version. In other cases a tampon is to be employed without rupture of the membranes.

SKUTSCH mentioned the case of a young woman who had never borne children nor had a miscarriage. After severe pain and the loss of a small quantity of blood, she passed a membrane which was a perfect cast of the cavity of the uterus with a small opening corresponding to the internal os. The conclusion was drawn that the embryo had been passed unobserved in the blood-clots. However, two days later, pain recurred and the woman expelled a perfect embryo about four centimeters (1 3-5 inches) in length. The question arose whether the membrane first passed was a decidua vera or reflexa. The size of the opening in it absolutely precluded the idea that the fetus had been contained in its cavity. Bimanual palpation showed that the right tube was considerably increased in size. The uterus itself was neither bifid nor bicornate. The explanation seemed to be that this was a miscarriage following tubal pregnancy, the decidua vera being first expelled.

BODERLEIN spoke of the danger of intra-uterine injections, mentioning a case which occurred recently in which death followed forty-eight hours after the injection of two cubic centimeters (thirty minims) of a fifty-per-cent. solution of chlorid of zinc. At the autopsy the zinc was found in the peritoneal cavity, although there was no trace of cauterization of the tube. Boderlein experimented upon six uteri which were about to be removed by the vaginal route. Immediately before operation the cervical canal was dilated, and under circumstances which permitted the escape of the excess of the fluid through the vagina, a small syringeful of a solution of methyl violet was injected into the cavity of the uterus in four cases. In one case the fluid easily penetrated into the cul-de-sac of Douglas. In two cases the tubes were found to be obliterated. In the fourth case the tubes were open, but the fluid did not pass through them. In a fifth case, in which tincture of iodine was injected, the tubes were found to be closed. In the sixth case a fifty-per-cent. solution of chlorid of zinc was used. In this instance the peritoneal cavity was afterward found to contain three or four tablespoonfuls of a milky fluid containing coagulated fibrin, a liquid due, in the opinion of the speaker, to peritoneal exudation. The right tube was red and swollen, but did not present the appearances of true cauterization.

An Electuary for Habitual Constipation.—

R̄	Washed sulphur	} aa . . .	4 parts
	Cream of tartar		
	Senna leaves	. . .	2 parts
	Powdered cardamon	. . .	1 part.

Syrup of rhamnus, q. s. ad. to give the right consistence.

M. Sig. A teaspoonful to be taken morning and evening.—*Jour. de Méd. de Paris.*

SOCIETY PROCEEDINGS.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-fifth Annual Meeting, Held at Montreal, August 31 to September 3, 1897.

[Special Report to THE MEDICAL NEWS.]

SECTION IN DERMATOLOGY.

FIRST DAY—SEPTEMBER 1ST.

MR. MALCOLM MORRIS of London, England, delivered the annual address, entitled

THE RISE AND PROGRESS OF DERMATOLOGY.

The speaker referred to the present being a time of jubilees and centenaries, and to the chastening effect of such retrospects—"showing that, if we have any reason to look upon ourselves as just in a scientific sense, it is largely the result not of our own merits, but of those of the men who prepared the way for us." He further pointed out that they have the great advantage of enabling us to see exactly what we have attained in our knowledge of dermatology, and in showing us what has been done and what remains to be done.

He stated that in the recountings of the triumphs of medicine during the glorious reign of Queen Victoria dermatology has had no part. Dermatology, although its victories have perhaps been less showy than those won in some other special departments, has not lagged behind in the onward march of medicine. He said that his object would be to supply the missing chord in the great *Jubilate*, the echoes of which are still ringing in our ears. He called attention to the fact that the centenary of the birth of scientific dermatology is not long past. In 1790 the Medical Society of London awarded the Fothergillian gold medal to Robert Willan, who had some time before submitted his plan for the arrangement and description of cutaneous diseases. Willan may justly be called the creator of dermatology. Our terminology bears witness that Willan was not the first who wrote on skin disease. The Greeks gave a good deal of attention to the subject, and roughly classified cutaneous disorders, though they confounded much they observed with leprosy, and at a later period syphilis overshadowed everything.

After speaking of various medieval writers and writings upon the subject in hand, he turned to the English school, headed by Willan, before mentioned, and his pupil, Bateman, who completed Willan's unfinished work on skin diseases. A landmark in the history of English dermatology is the work "Diseases of the Skin," by Erasmus Wilson, which appeared in 1851. The characteristics of the British school of dermatology are those of the British intellect in whatever sphere it is set to work, above everything else practical, and a capacity for seeing things as they really are. The living leader of the British school, Mr. Jonathan Hutchinson, was spoken of in terms as laudatory, under the circumstances, as it would be permissible to use. Of him it was said that he brought to the study of the pathology of the skin a knowledge of disease in general such as probably no other dermatologist ever possessed. The facts gathered by the members of the English school have endured while theories and systems have followed

each other into nothingness. Dermatology as it exists to-day is largely the work of their hands.

In France a school of dermatology arose independently during the early years of the century. Skin diseases were regarded, for the most part, as the expressions of some constitutional dyscrasia, which at best was an unnecessary hypothesis, and was sometimes, as in the case of the so-called "dartrous," "psoric," and "herpetic" diatheses, a myth. Indeed, it may be said that early French dermatology was the "last ditch" in which these medieval notions still fought for life. In recent years the labors of Hardy, Vidal, Besnier, and Brocq have placed the French school in the forefront of scientific dermatology—a position which, with such men as Derier, Thibierge, and Wickham to take the place of their seniors, it is in no danger of losing.

In 1844 the first appearance of Ferdinand Hebra before the scientific world marked an era in German dermatology. Hebra applied to the investigation of skin diseases the pathologic teaching of Rokitansky. He classified them according to the nature of the pathologic processes of which they were examples. He used the experimental method, and produced various lesions on healthy skin by artificial means, observing the changes which they underwent when allowed to run their course, and when modified by treatment of various kinds. Hebra rationalized dermatology, and his classification, though it has necessarily been modified with the growth of knowledge, will never be superseded till an arrangement based upon etiology becomes possible.

In regard to American dermatology, the speaker quoted from its history as written by Professor J. C. White of Harvard and by Professor L. A. Duhring of Philadelphia. During the first thirty years of the century little or no interest was taken in cutaneous affections in America. In fact, as Duhring tells us, a disposition existed to consign the whole of this branch of medicine to those outside the professional pale. Signs of a growing interest in the subject soon became manifest. In 1836 an Infirmary for Diseases of the Skin was opened in New York, being the first institution of the kind in the United States, and lectures on skin diseases were delivered there, and afterward in some of the medical schools of New York between the years 1837 and 1854, by Dr. H. D. Bulkley, father of Dr. L. D. Bulkley, whose name is well known to all dermatologists. The establishment of the American Dermatological Association in 1877 gave a powerful impulse to dermatology in this country, yet in 1871 Professor J. C. White complained that as yet America had contributed little to dermatology. Now this reproach has been wiped away, and American dermatology, represented by Duhring, White, Bulkley, and others, is recognized as being in the van of progress.

By the translation of the representative works of each of the three great schools into the language of the others, dermatology has become truly international, the different schools' which were formerly separate being fused into one.

The most striking mark of the progress of this specialty as compared with its status in the beginning of the century, is the knowledge of the nature and causes of skin

diseases which has been gained. Classification has been simplified, until dermatology is no longer a terror to students and practitioners. Further simplification has resulted from learning to distinguish between primary and secondary lesions. Pathologic research has accomplished much in the elucidation of the nature of growth, benign and malignant, of the skin. Real progress, however, has been measured by the increase of our knowledge of the causes of disease. In this respect the speaker thought as much had been done in dermatology as in any other branch of medicine, and stated that the etiology of a considerable proportion of skin diseases is now accurately known. The differentiation of the skin affections due to syphilis and tuberculosis has greatly reduced the region of the unknown in the map of dermatology. The progress of dermatologic etiology has been materially augmented by an increased knowledge of the parasitic skin diseases, particularly by the discovery of the vegetable fungi which cause ring-worm, favus, tinea versicolor, and erythrasma. The speaker also treated briefly the advance in pathology due to the bacteriologic researches of Pasteur, Koch, and their disciples. Many skin affections have already been proved to be of microbic origin. It is practically certain that syphilis has a like cause. Eczema and psoriasis are considered by Unna, who has done much for recent advance in dermatology, to be of microbic causation. The same is said to be true in regard to alopecia areata, acne, and certain forms of erythema. Quite recently Sabouraud has produced evidence which he thinks sufficient to prove that seborrhea and common baldness belong in the same category. Though these views have not all been accepted, there can be little doubt that, as methods of research are perfected, the "sphere of influence" of bacteriology in relation to skin diseases will be greatly enlarged.

The speaker also referred to disorders of the nervous system and to auto-intoxication as causative factors in the production of cutaneous affections, a field as yet but little explored. In reference to therapeutics, he said that now internal medication is used only in response to definite indications.

He spoke of hypodermic injection as one of the most promising improvements in constitutional therapeutics. The serum treatment, though not yet definitely established, has given good results in a few cases of syphilis, lupus, leprosy, etc. Koch's first tuberculin was mentioned as having a distinct use as a preliminary to the surgical treatment of lupus. The newer tuberculin gives promise of much greater usefulness.

The speaker's experience, and that of several other dermatologists, does not lead him to attach much importance to the use of thyroid extract in dermatologic practice. In regard to the improvements in means of local treatment, he spoke in terms of praise, mentioning particularly the long and constantly increasing list of parasitocides, the more cleanly and effective modes of preparation and application, the pastes, plasters, varnishes, soaps, sticks, and other devices which have revolutionized the local treatment of skin diseases.

In conclusion, he spoke of the future of dermatology.

He thought that the newer medication with serums and organic extracts will be the direction most likely to lead to the best results.

At the conclusion of this address, DR. GEORGE THOMAS JACKSON of New York read a paper, entitled

A CASE OF MULTIPLE IDIOPATHIC ANGIOSARCOMA
LASTING TWENTY-ONE YEARS.

The patient was a man, a native of Nova Scotia, aged forty-seven, and the lesions were widely distributed. Involvement had taken place under the administration of arsenic. The pathologic report, by Dr. G. P. Elliott of New York, showed that the lesions were of the type of pigmented spindle-celled angiosarcoma.

DR. NEVINS HYDE of Chicago said that a like improvement under arsenic had taken place in a similar case under his treatment. The clinical characters remove these cases from the category of sarcoma.

DR. JAMES GALLOWAY referred to a case under the care of Dr. Stephen Mackenzie which he had observed during nine or ten years. Histologically, the cells were degenerate in character and resembled those produced by chronic irritation of connective tissue. He agreed that the cases belonged to a category distinct from sarcoma.

A paper on

THE NON-SURGICAL TREATMENT OF BOILS, CAR-
BUNCLES, AND FELONS

was read by DR. L. DUNCAN BULKLEY of New York. He treats all the minor forms of these lesions by internal medication, consisting mainly of sulphate of magnesia and iron, with large doses of freshly prepared sulphid of calcium. Externally he applies carbolic acid and ergot in the form of an ointment. The PRESIDENT expressed the opinion that Dr. Bulkley's views were retrograde in tendency. He was convinced that he would be supported in the view that the best treatment in such cases is to remove the suppurating and necrosed tissue and to use antiseptic methods. An animated discussion took place on this subject.

DR. W. T. CORLETT of Cleveland, Ohio, read a paper on

THE GENERAL MANAGEMENT OF SKIN DISEASES, in which he urged the importance of general treatment, dietetic and hygienic. The PRESIDENT entered a protest against indiscriminate medication and exaggerated precautions in diet. Dr. G. H. Fox of New York expressed similar opinions, and said that in many cases the advice and care given by trainers to those preparing for athletic exercises is of more real value than the prescriptions of the physician. Dr. Nevins Hyde also protested against over-medication, but desired to defend American dermatologists from any imputation of the kind.

SECTION IN PHARMACOLOGY AND THERAPEUTICS.

FIRST DAY—SEPTEMBER 1ST.

DR. D. J. LEECH, President of the Section, delivered an address upon the subject of

PAST AND PRESENT VIEWS AS TO THE ACTIONS OF
MEDICINES.

He said in part: "The Section in Pharmacology and

Therapeutics, over which I have the honor to preside, is one of those which is not always constituted at the Annual Meetings of the British Medical Association. The fact that one side of its work—the therapeutic—can be dealt with in other sections is doubtless the chief cause of this; a second may be a certain lack of interest in Pharmacology. Comparatively little attention has been given in England in recent years to the cultivation of knowledge concerning the method in which remedial agents act. In most countries, however, a constantly increasing interest is being shown in determining, not only the action of remedies, but the mode of their action. The establishment on this side of the Atlantic of that admirable periodical, *The Journal of Experimental Medicine*, in which Pharmacology takes its place with Physiology, Pathology, and Medicine, is a valuable sign of this interest, and my great pleasure at being honored with the office of President of this Section is heightened by the feeling that by its constitution on this occasion evidence is given of the appreciation of the scientific as well as the practical side of therapeutics in this country.

"The discoveries made concerning the curative influence of certain animal substances, such as thyroid gland, and concerning toxins and antitoxins, mark a new departure in therapeutics. Dr. Saundby considers that though the recent discoveries with regard to pathogenic organisms and their products open up to us an altogether new prospect in therapeutics, the system of pharmacology is about to pass into the limbo of the forgotten, and Professor Behring of Marburg thinks that in the light of serum treatment all our older views must vanish. Cellular pathology, he says, has become unfruitful for therapeutics; it is vain to treat the organs which are affected. Serum treatment, if we may judge from the *résumé* of his paper, which was read at the recent *Congress für innere Medizin* at Berlin, is alone efficient. If Behring's view as to its nature is correct, its study is almost outside the boundaries of pharmacology, for he holds that antitoxin is not a definite chemical compound, but a *quality*, inherent in certain albuminous substances as magnetism is in the magnetic oxid of iron. If antitoxins are powers, not substances, we are almost carried into a new world in which pharmacology, as at present understood, has no place. There seems little probability that the view of the enthusiastic supporter of serum treatment has any real foundation, and as I do not know the reasoning which has led to its adoption I shall not attempt to controvert it. The general bearing, however, of treatment by animal substances on our ideas as to the methods in which medicines act is worthy of consideration. My contention is that the new discoveries, while extending the domain of pharmacology, are in no way opposed to its long-established teachings; that the various animal substances act on the same lines as the older remedies, though they possess certain properties which are wanting, or less apparent, in the older drugs, and that even if the most sanguine expectations of their powers are fully borne out, the utility of the pharmacologic knowledge already acquired will not be lessened.

"Concerning the action of thyroid and allied substances I need say but little. Physiologic and pathologic

investigations indicate that the ductless glands, and even those which furnish excretions, supply some material which passes into the blood; and it is just possible that other tissues do the same. These internal secretions are probably necessary for the chemic transformation of other substances in various parts of the system, and if the supply be defective certain ailments result. By giving thyroid gland we can certainly remove the effects due to an insufficient supply of its secretions, and reason has been given for believing that several other animal substances and their extracts yield, when given internally, material wanting in the blood, and thus prove of advantage in some diseases. But we have here no new pharmacologic principle. The administration of a remedy for the purpose of adding something to the blood, which is not present in sufficient quantity, is not a departure from ordinary pharmacologic ideas.

"The effect of toxins and antitoxins requires to be more fully dealt with, but before comparing their action with that of other medicinal substances, let me point out opinions formed during late years with regard to the action of the latter. In the first place, it has become clear that for the changes in functions or tissues we must chiefly look to the effects produced by drugs on the ultimate tissue elements, or cell protoplasts, and Schmiedeberg long ago pointed out that this influence is probably to some extent molecular. The presence of molecules of elements or chemic compounds seems to produce some effect on those of the protoplasm which leads to change in the function of the tissues into which the protoplasm enters. It is quite possible that pharmacologic agents may likewise influence chemic processes in the protoplasm without themselves being changed, but however this may be, it seems clear that the primary effect of remedial agents is exerted through their influence on cell-protoplasm, the nutritional processes of which are altered, with the result that the tissues into which the protoplasm enters are altered in function.

"In some instances their continued contact seems to give rise to further changes; something occurs which causes the drug molecules to lose their usual influence, and tolerance of, or immunity to the drug is produced. How far this immunizing effect of drugs extends we do not know. It seems to occur in certain people only in the case of arsenic. The alkaloid morphin is the best example of it, but it has been shown by Ehrlich to be produced by the two vegetable albuminoid substances, ricin and abrin. On the cause of immunization we can only speculate. The cell protoplasm may, owing to some alteration in its functions, expel the drug with unwonted quickness, or it may destroy it; but it seems more likely that some change takes place in the nutrition of the cell which renders it insusceptible to the influence which under normal conditions alters its functions.

"Turning now to the toxins, it may be noted that they disturb the functions of the various organs like other pharmacologic agents. They have a definite physiologic action, and there is no reason for believing that they act on tissues in a manner fundamentally different from other medicinal agents. They have, indeed, a more marked

power than most drugs in producing immunity. It is impossible to say whether in this respect they act like ordinary drugs, but it can hardly be doubted that they produce their effects in a similar, if not in the same way.

"A third property which toxins have has not been shown to be common to the medicinal agents hitherto employed. They lead to the production of antitoxins, but how, we know not. Protoplasm has the power of altering substances which come in contact with it, and it is possible to imagine that by some subtle chemic influence the toxin is converted into a substance directly antagonistic to it in physiologic properties. But it seems far more probable that antitoxins are produced by the protoplasm itself, under the influence which the toxin exerts upon it. It is shown that the serum of blood does contain a bactericidal substance, and many years ago Hankin pointed out that the blood of certain animals normally contains what he called a 'defensive proteid,' to which Buchner subsequently gave the name of 'alexin,' and which practically is an antitoxin. If cell protoplasm has the property of thus normally producing such defensive material, it is not difficult to imagine that under the influence of certain toxins it may produce special antitoxins.

"The methods in which antitoxins act is as yet shrouded in obscurity. There is no reason for believing that their effects are produced in a manner different in kind from those of other drugs. The action, then, of the new animal substances seems not dissimilar from that of our older remedies."

The discussion on

THE TREATMENT OF INSOMNIA,

was then opened by DR. C. K. CLARKE of Kingston, Ont., who spoke on general treatment. After dealing with the physiology of sleep, and Howell's recent researches in particular, he proceeded to discuss the treatment of insomnia in various conditions. Drug treatment in general was deprecated. In acute mania the warm bath (104° F.), with cold applications to the head, and in neurasthenia massage, frictions, etc., were advocated. Stress was laid on McFarlane's view of sleeplessness as a bad habit, and regularity in the time of going to bed was recommended. Hot milk and beer were advised as adjuncts. In conclusion, the insomnia of toxemias, and that accompanying surgical disorders, was considered.

DR. R. W. WILCOX of New York then dealt with

THE MODE OF ACTION OF HYPNOTICS.

Howell's, Ramon y Cajal's, and Ruckhard's views of the physiology of sleep were treated of in detail and the action of alcoholic radicals, chlorin in organic combination, etc., was alluded to. The treatment of insomnia by drugs was then considered. Of vegetable narcotics, pellotin was regarded with favor; his experience with amylen hydrate, methylal, paraldehyde, chloral, chloralamid, sulphonal, trional, tetronal, and urethan was given, his paper closing with a comparison of paraldehyde, chloralamid, pellotin, and trional as regards potency, rapidity, and duration of action, habituation, and safety.

THE ILL EFFECTS OF, AND CONTRA-INDICATIONS TO
THE USE OF HYPNOTICS

were then considered by DR. A. MCPHEDRAN. The physiology and etiology of sleeplessness were first summarized and the ill effects of individual drugs subsequently dealt with. Hypnotism, it was recommended, should be resorted to but rarely, and only when other means have failed.

DR. EDIS of Jamaica Plains contributed a paper on this subject and dwelt on the value of gentle fatigue.

PROFESSOR RICHEL of Paris gave an excellent description of the pharmacology of chloralose, and the discussion was continued by Drs. D. Macalister, Saundby, Cushing, Barnes, MacCallum, Learned, Campbell, Muir, Brookhouse, Whitla, Rayner, Smith, Atkinson, and the President. There was a consensus of opinion that hypnotics should only be used as a last resource. Chloral was deprecated by the majority, and sulphonal also received some strictures. Dr. Donald Macalister confined his remarks to the insomnia occurring in otherwise healthy subjects, and strongly recommended what he termed the air-bath, the wet sack, and as drugs, strychnin in coffee, and magnesium sulphate. Dr. Saundby believed the older hypnotics were the best, and DR. Learned dealt in detail with a physical mode of treatment he had found beneficial. Dr. Whitla regarded the use of digitalis, with chloral, etc., as useless, and strongly recommended chloral as an hypnotic. Dr. Leech closed the debate by a few pregnant remarks on the treatment of sleeplessness in the old and the middle-aged.

SECOND DAY—SEPTEMBER 2D.

This section met jointly with the Section in Dermatology to discuss the subject of

THE TREATMENT OF SYPHILIS.

The Chair was taken by DR. D. J. LEECH. The subject was introduced by DR. WHITLA of Belfast, Ireland, who said that two drugs alone need be considered—mercury and the iodids. He regarded it as proved that mercury has a specific or curative effect on syphilis, and thought it best to limit his attention to the following points: (1) How mercury and the iodids are supposed to act; (2) when should mercurial treatment be begun; especially, should it be given in the primary stage? (3) the various methods for its routine administration, its dosage, and the length of time necessary for mercurial treatment; (4) the treatment of tertiary symptoms and congenital syphilis. The pharmacology of mercury—the mode of absorption especially when administered by inunction, its elimination, etc., was considered. Mercury he regarded as a vital antidote to the syphilitic poison, and so long as the virus of syphilis remains in the organism, mercury, he believed, would expend its force upon it without injury to the patient. This, he thought, gave a working hypothesis as regards dosage. The question of the bactericidal power of iodids in connection with Binz's view was dealt with, and their inutility in the first and early second stages emphasized. The continuous and interrupted methods of administering mercury were treated at length, although it

was stated that these could not be rigidly separated. The continuous method was favored by the speaker. He prescribes small doses as early as possible. Routine treatment was deprecated. As a guide determining the effect of the mercury, the weight-chart was strongly recommended. Of the various modes of administration, the method of inunction is most generally useful, although this possesses many disadvantages. Under ordinary circumstances small doses of mercurous iodids are sufficient. In the tertiary stage he advised pushing the iodids until the symptoms abate.

DR. NEVINS HYDE of Chicago laid particular stress on the constitution of the individual. He believes that there are mild cases needing little or no treatment, and severe cases (mainly inherited) which seem insusceptible to all treatment. Between these is the mass of cases giving the most satisfactory results. The best effects are obtained where iodids are not used; they are the remedies for the complications.

MR. MALCOLM MORRIS divided syphilitics into those who take alcohol and those who do not. He had not seen good results from intramuscular injections. The mercurial air-bath in certain conditions (extensive ulcerations) is strongly to be recommended, and to this treatment inunction, warm baths, especially those of a stimulating character, are useful adjuncts. The combination of ammonia and sarsaparilla with iodids is beneficial.

DR. L. DUNCAN BULKLEY of New York thought large doses of iodids unnecessary in the third stage if these drugs are combined with a small amount of mercury. The President then closed the discussion by referring to the inutility of other drugs than mercury and iodine, and agreed with Dr. Whitla in believing it often necessary to push iodids in the third stage of this disease. Combination of the iodids with ammonia is useful.

DR. WHITLA, in reply, said that the whole secret of success in the treatment of syphilis is to get as much mercury into the system as possible without producing ill effects.

DR. A. R. CUSHNEY of Ann Arbor, Mich., then read a paper on

PHARMACOLOGY OF THE MAMMALIAN HEART.

He demonstrated his method of experimenting, and showed tracings of the effect of aconite, digitalis, chloroform, alcohol, nitroglycerin, etc.

THIRD DAY—SEPTEMBER 3D.

The discussion on

DIURETICS

was opened by DR. BARR of Liverpool, who dwelt at length on the physics of the circulation, especially in pathologic conditions. He then proceeded to deal with the treatment of diseases in which diuretics are indicated. The flushing process is based on the principle of washing out waste products, ptomains, etc., and natural springs are no better than similar artificial products for this purpose. In granular kidney the best treatment, he thought, is to cut off nitrogenous foods, to take a purely vegetable diet, to drink whey and mild alkaline waters, and to regu-

late the intestinal secretions by calomel. Benzoate of ammonium in uremia was recommended. In heart disease, cardiac tonics, combined in some cases with vasodilators, were regarded as most efficacious. In obstructive lung disease, ammonia, senega, and the saline diuretics; in cirrhosis of the liver, vasomotor and cardiac tonics with mild saline purgatives; in hysteria with anuria, water and whey freely, and general venesection and antimony were regarded as the most effectual agents in the dropsy of acute Bright's disease. In conclusion, the speaker said that diuretics are simply adjuncts to treatment; that no disease or process of disease should be solely treated by them.

MR. C. R. MARSHALL of Cambridge, England, then dealt with the action of diuretics. As this subject could not be separated from the physiology of renal secretion, this was first considered. Various recent views were mentioned and criticized, and the possibility of explaining urinary excretion on a purely physical basis dealt with. Special stress was laid upon the metabolism of the renal cells as factors in accounting for the composition of the urine. The definition, classification, etc., of diuretics was next considered, and an illustration of so-called tachyuretics was given. Munk's, Sobieranski's, and Raphael's work was specially considered, and the action of certain types of diuretics described.

DR. J. E. ATKINSON of Newcastle, England, spoke on the absence of increased diuresis after the administration of nitrites and nitroglycerin, and Dr. Shingleton Smith of Bristol, England, referred to the effect of digitalis and diuretics in certain conditions, and commented on the fact that apocynum cannabinum had not been mentioned. This is little known in England, but in some cases it is a useful diuretic.

DR. H. A. MCCALLUM of London, Ont., then read a paper on

THE ACTION OF BEHRING'S SERUM IN DISEASES NOT CAUSED BY THE KLEBS-LOEFFLER BACILLUS.

The effect on consumption, cancer, pelvic inflammation, lupus, etc., was discussed. In one case of tuberculosis 25,000 units of the serum were given during three months, apparently with benefit. A favorable action was reported in a case of lupus. The theory suggested was that the serum increases the internal secretions.

In connection with this paper, DR. BAZIN's, on

DIPHThERIA ANTITOXIN.

was read. He regarded it as important that the strength, date of production, etc., should be stated on the label. He believed that a "clinical suspicion" affords sufficient grounds for the use of the serum. Bacterial examination should follow this. Immunization should be more generally followed.

THE PRESIDENT asked if cardiac failure does not sometimes follow the injections, but Dr. Bazin believed this is a coincidence, and not a result of the antitoxin. He corroborated Dr. McCallum's observations on the hypnotic effect of the serum, and stated that slight turbidity, or rather fluorescence, is not prohibitive to its use.

THERAPEUTIC HINTS.

Fever Mixture for a Child.—The combination here given will act most efficaciously in reducing the temperature of a child in those cases in which no etiologic factor is discoverable:

℞	Tr. aconiti	gtt. v
	Potassij bromidi	3 ss
	Spt. etheris nitrosi	3 ii
	Mist. potassii citratis	3 ii.

M. Sig. Teaspoonful every three hours.

For Chronic Constipation accompanied by torpidity of the liver the following will prove very efficacious:

℞	Sodii sulphatis	℥ i
	Sodii phosphatis	3 ss
	Potassii iodi	gr. xl.

M. et. ft. Chart. No. viii. Sig. One powder in a glassful of either hot or cold water on rising in the morning.

For Urticaria.—The following remedy is of service in urticaria:

℞	Menthol	1 part
	Chloroform	} aa 3 parts.
	Ether	
	Spirits of camphor	

M. Sig. After an application of the above dust the skin with oxid of zinc. If the urticaria is of a stomachal origin, give laxatives, preferably the saline waters.—*Jour. de Méd. de Paris.*

For Catarrhal Sore Throat.

℞	Pulv. aluminis	gr. xv
	Acidi hydrochlor. dil.	m x
	Mellis	3 i
	Aquæ, q. s. ad.	3 i.

M. Sig. 3 i added to 3 viii of water, used as a gargle when necessary.

An Old and Excellent Tonic Mixture Is the Following:

℞	Liq. arsenici chloridi	3 ss
	Tinct. ferri chloridi	3 iss
	Cinchonæ sulphatis	3 ii
	Strychniæ sulphatis	gr. ii
	Syrupi } aa q. s. ad.	3 vi.
	Aquæ }	

M. Sig. Teaspoonful in water three times a day before meals.

A Good Antineuralgic Combination Is the Following:

℞	Acidi arseniosi	gr. iv
	Strychniæ sulph.	gr. iii
	Ext. belladonnæ	gr. xxiv
	Cinchonæ sulph.	3 i
	Pilulæ ferri carbonatis	3 v.

M. Sig. One pill three times daily after meals.

Chloral May Be Pleasantly Combined as Follows;

℞	Chloral hydrat.	3 i, 3 i
	Tinct. cardamomi	3 ss
	Syrupi	3 i
	Aquæ cinnamomi, q. s. ad.	3 i.

M. A. teaspoonful contains 10 grs. of chloral.

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ORIGINAL ARTICLES.

RACIAL DETERIORATION: THE INCREASE OF SUICIDE.¹

By LAWRENCE IRWELL, M.A., B.C.L.,
OF BUFFALO, N. Y.

THE suicide record of the United States since 1890, according to recent statistics, stands as follows: 1890, 2040; 1891, 3531; 1892, 3860; 1893, 4436; 1894, 4912; 1895, 5750; 1896, 6520. The census of 1880 furnishes us with the number of suicides in that year—2511, but as far as I can ascertain, the census of 1890 contains no information upon the subject, the word "suicide" having been omitted from the index of Part 4 of volume 50. However difficult it may be to obtain accurate statistics, it appears certain that in each 100,000 deaths from specified causes, 253 in 1860 were due to suicide, 273 in 1870, and 331 in 1880. These figures, however, give no idea of the actual number of persons who voluntarily ended their existence during the years named; they merely tell us of the number of cases of suicide which were discovered. How many suicides are lost annually to the statistician, no man can say, and I refrain from speculating upon the subject. Statistics of unsuccessful attempts at suicide are obviously unobtainable.

Is suicide increasing in the English-speaking world? I do not find any difficulty in answering this question in the affirmative, although my statistics are very incomplete. Some of my figures are taken from Great Britain. In 1864, in England and Wales, the suicide-rate was 61 to the million persons living; in 1888 it was 81 per million—an increase of one-third (33 per cent.) in less than 25 years. This steady increase is also present in this country. In Massachusetts in the 30 years, 1860 to 1890, self-destruction rose from 69.9 to 90.9 per million living; and in Connecticut from 60.6 to 103.3 per million living. Reliable statistics of suicide in the States of New York and Pennsylvania—if they exist—are not at my disposal.

Admitting then, that self-destruction is on the increase, what, I ask, is the cause of it? The degeneration of the human race, of which the suicidal impulse is a sign, is the result of the many deteriorating

influences inseparable from what we call "civilization," together with those which are the outcome of vice. Among the former may be mentioned want of fresh air, improper food and clothing, premature child-bearing, and unhealthy occupations. These, in themselves, are most injurious to the well-being of the race, but when the degenerating influences of alcohol, tuberculosis, and syphilis are added a combination results which the human organism cannot long resist. In an interesting work, entitled "Degeneration among Londoners," an assertion appears, the truth of which nobody will doubt, that the London poor do not survive beyond three, or at most, four generations. If, however, any expert opinion is necessary to corroborate my statement that self-destruction increases with civilization, I append the words of Morselli, *viz.*: "The certainty of the figures and the regularity of the progressive increase of suicide, from the time when statistics were first collected to now, is such, and so great, even in respect to countries different in race, religion, and number of inhabitants, that it is not possible to explain it otherwise than as an effect of that universal and complex influence to which we give the name of civilization."

The reasons I have given for the degenerating influences of civilization are not altogether applicable to the better-educated classes, but as suicide, insanity, and epilepsy are found among the rich as well as among the poor, the causes of this condition must be sought for. In the first place, if a person is financially and socially eligible for marriage, whether his mother was a lunatic or his brother an idiot, is not regarded as a matter of any importance whatever. While the "educated" classes are quite familiar with some of the laws of heredity, and apply them to the breeding of their dogs, they wilfully ignore the best interests of the human race by the incessant propagation of the unfit. Having money at their command, they endeavor, with the aid of the medical profession, to preserve their degenerated offspring from the natural results of the cosmic process. Never in the history of the world was there a time when such strenuous efforts were made to prolong the lives of the absolutely unfit that they might have an opportunity of reproducing their kind; never was there a race which suffered as the English-speaking race is now suffering from the fertility of the worst specimens of humanity.

¹ Read before the Economic Section of the American Association for the Advancement of Science, Detroit, Mich., August, 1897.

With each generation the vitality of the community is being reduced by its manner of life, and in order to enable it to continue the fight against the inevitable laws of nature, all sorts of artificial aids have been invented. False teeth, spectacles, ear-trumpets, wigs, to say nothing of predigested foods, are a few of the contrivances with which we are trying to carry out the pernicious doctrine of the survival of the unfittest. Further, luxurious excess and the numerous vices of the rich all tend toward racial decay. One word more before I leave this point. The Indian is less civilized than the negro. Suicides among the latter are about eighteen times as numerous as among the former. The white man is far more civilized than the negro. Self-destruction is ten times more frequent in the white race than among the colored population.

By "civilization" we mean, for example, that we are able to dine in New York and to breakfast at Buffalo. We profess to "rest" upon a train which moves at the rate of fifty-five miles an hour; and many of us are foolish enough to expect to be fit for work upon rising from our moving bed. Moreover, the modern vacation is so arranged that it will be almost as exhausting as the average business day. "It is the pace that kills," is an old saying, and it is a very true one. The average nervous system is unable to bear the strain of this pace. Some give up the struggle and retire to the lunatic asylum. Others fight to the premature end, bringing forth a new generation, bearing in every organ the signs of the unnatural life which the parents have lived. From this new generation spring many of our lunatics, criminals, and suicides. In two generations more idiots and deaf-mutes make their appearance. But this condition does not extend indefinitely, for we have not succeeded in counteracting the process of natural selection, and three generations later, the degenerated family is probably sterile.

It is now well-recognized that suicide, insanity, and epilepsy are all signs of family decay. Many alienists have, by following the family history of suicides, been able to demonstrate not only that suicide frequently occurs in some families, but also that, while remaining dormant in one generation, it reappears in the next. How long it will be before we admit that the congenital tuberculous diathesis is a sure sign of a degenerative change in the human organism, I cannot tell, but there is to my mind, abundant statistical evidence that such is the case.

The result of the various abnormal conditions of the constitution to which I have referred is the increase of lunacy, idiocy, instinctive criminality, and habitual inebriety. Are these evils increasing out of all proportion to the increasing strain of modern

life? I think so. Within recent years there has been a tendency, especially in this country, to push women into competition with men in practically every walk of life. The system has not, however, been long enough in operation to have affected the suicidal rate, although it has increased the amount of dementia paralytica and instinctive crime among the female sex. That, in course of time, the female death-rate from suicide will likewise increase is unquestionable. Perhaps it would be well to look at all the facts. Among all nations, ancient and modern, suicide has been much more frequently practised by men than by women. The usual ratio is and always has been about three or four males to one female, and out of the 6520 persons who voluntarily ended their lives in the United States in 1896, 5078 were men and 1442 were women. As might be expected, the rate of self-destruction varies in different countries. In Switzerland, for example, out of every hundred suicides only 12.2 are females, while in England, the rate appears to be for males 104 annually to every million men living, and for females, only 41 per million women living. Spain has, when the sexes are taken together, the lowest suicide-rate of all European countries, but when women alone are taken the rate is about 28.10 per one hundred. The explanation of this phenomenon is, I think, to be found in the two facts that love, hate, and jealousy are less curtailed by Spaniards than by any other nation, and that these passions play a far more important part in the lives of the so-called "weaker" sex than they do in the lives of men.

In the Australian colonies, the female suicide-rate is low as compared with the male. This is what we should expect in a country where women are scarce, and being much sought after, are kindly treated. In Scotland, upon the other hand, the female suicidal rate is higher than in most other countries, the probable reason being that the illegitimate birth-rate is high, a condition which is productive of an unlimited amount of misery and despair among the mothers of the bastard children.

The comparative immunity of the female sex to self-destruction is partly dependent upon the less harassing position which woman has, up to now, taken in the struggle for existence; partly upon the less vicious life which she usually leads, and partly upon her natural repugnance to personal violence and mutilation of the body. In England, at one period of life, the suicidal rate among females not only equals but actually exceeds that of the males. This is during the 15-to-20-years-of-age period, and it is to be accounted for by the severe constitutional change experienced by women at this time. The English statistics show also an increase of female sui-

cides during the 44-to-55-years-of-age period, due, of course, to the climacteric.

The death-rate from the results of drinking alcoholic liquors is probably on the increase. Nevertheless, drinking is becoming less general, for it is now more narrowly confined to the habitual drunkard, who is, in the majority of cases, the victim of hereditary predisposition, than it was fifteen years ago. Thus, though the evil is as virulent as it ever was, its field of action is smaller, the acquired form of inebriety being somewhat less common than it was in the days of yore. As far as the race is concerned, the change is for the better. The conclusion that must be drawn from the evidence is that intemperance is only responsible for a small part of the increase of suicide.

The evil effects arising from the advance of civilization are great, yet improved sanitation must, to some extent, have neutralized them. That being so, the increased severity of the struggle for life cannot be regarded as the *causa vera* of the addition to the suicide death-rate. To what then must the increase be attributed? The answer is to heredity, and to the fertility of the degenerated portion of the community. Suicide is frequently interchangeable in transmission with other diseases, especially diseases of the nervous system. Every alienist is aware of this, and it would be mere waste of time to quote the words of any one of them, or to give the history of families in which suicide has occurred several times. I have before me the statistics of the death-rate in England from 1866 to 1890, from which the following facts are taken:

Cause of Death.	Increase per cent. in 25 years.
Cancer.....	75.5
Nervous diseases.....	10.2
Premature birth.....	26.5
Diabetes.....	103.1
Other kidney diseases.....	63.4
Heart diseases.....	65.9
Intemperance.....	59.0
Congenital malformation.....	21.5
Other constitutional diseases.....	118.7

The death-rate (in England) from pulmonary tuberculosis shows a decrease of 35.3 per cent., but the process of natural selection has been producing a decrease in the deaths from this disorder for (in English cities and towns) some 75 years. That there has been any appreciable increased rate of decrease since the discovery of the Koch bacillus in 1882 is not shown by any statistics that I have been able to discover. As tuberculous diseases still furnish 12 per cent. of all the deaths in England, it is evident that those predisposed to consumption are not abstaining from the reproduction of children, many of whom die insane, and some of whom die of cancer. The extreme contagionists make a great deal of noise, but they appear to forget that a congenital consump-

tive is a true degenerate, both mental and physical, and that the bacillus tuberculosis is the benefactor of the race if it removes him before he has succeeded in adding to the degenerate population. If, however, the contagionists would find some large city where the death-rate from phthisis shows a marked additional rate of decrease since 1882, their "anti-septiphobic" clamor might receive some serious attention. The bacillus tuberculosis does not attack persons in normal health, and it has a special predilection for the insane.

The question of nativity in reference to suicides in America is, perhaps, of some importance, since the uninitiated attribute always every mark of degeneration to "the foreign-born element." To obtain accurate figures upon any subject, outside of industrial questions, is, in this country, practically impossible. The numerous officials who are appointed or elected by the various States, having received positions as a reward for political services, are not interested in statistics, even if they are competent to compile them. The collection of figures once in a decade for the Federal Census is quite insufficient, and the volumes containing the information take years to reach the public libraries. A portion of the Census of 1890 is not yet (July, 1897) ready! A permanent United States Registrar of Statistics, with a competent staff, which ought to be absolutely outside the interference of the politicians—if such a condition is possible—is urgently needed.

The following figures relate to New York City. As far as I can judge, however, they furnish a fairly accurate index to the nativity of the suicides all over the country.

	1892.	1893.	1894.	1895.	1896.
Total number of suicides:	241	314	331	376	384
Nativity.					
1. Germany.....	105	127	122	130	126
2. United States.....	57	81	100	108	109
3. Ireland.....	17	26	20	19	21
4. All others.....	62	80	89	119	128

While I should like to believe that an American nation is being produced which is superior to that inhabiting any other land, I do not find any signs of it in the statistics of self-destruction among the native-born in New York City. It is possible, of course, that suicide may be most common among the children of foreign-born parents, but such evidence as I have been able to obtain seems to show that the American system of living at "high pressure"—the haste to become rich—is not conducive to racial progress.

To sum up: Suicide does not appear to any ap-

¹ It is the fashion to speak of "Americans" as if there existed an American race, the prevalent idea being that, when three generations have been born in the United States, the "race" has been established.

preciable extent among savages, but is a product of civilization; it depends chiefly upon some constitutional depravity, as is shown by its emanation from bad stock, by the hereditary character of the predisposition toward it, and by the fact that in transmission it is very often handed down exactly as are other pathologic variations depending upon constitutional degeneration.

The time at my disposal compels me to devote the remainder of my paper to an attempt to answer the question, How can the brake be applied to racial deterioration, as evidenced by the increase of suicide? I do not wish it to be supposed that all members of every family in which epilepsy, idiocy, insanity, or suicide has occurred are so degenerate as to be unfitted to reproduce their species. Such families, however, must be regarded with suspicion. Other symptoms of decay should be looked for, and if they are, they will frequently be found. The first question to ask is, Does phthisis "run in the family?" or, to use scientific language, Does each generation inherit the tuberculous diathesis, and transmit it to its successor? The ebb of the tide of vitality of the family, and the danger to the race, must be estimated by the sum of the imperfections which are to be met with in the family history.

The appearance of nervous disorders usually proves that a tendency to decay has presented itself in a family; when suicide has also appeared the decay has actually begun. If such a family is to exist for more than three or four generations, an attempt must be made to increase its vitality by the infusion of untainted blood and by attention to the laws of health. I am not sanguine as to the results of these methods, because I do not believe that acquired characteristics are inherited, nor am I convinced of our ability to "breed out" pathologic variations. There is, nevertheless, a process by which the regeneration of the race may be accomplished, *viz.*: by artificial selection in reference to marriage. If those who are abnormal would refrain from the reproduction of the species, the problem would be solved. In my opinion it is our duty to teach that the markedly unfit should not propagate their kind. Of course, we ought to care for the weak and the suffering, but that any individual having a constitutional disorder should contaminate the race and increase suffering and misery by propagating his unfitness is, from a scientific standpoint, unpardonable. Careful and deliberate cultivation of all that is worst in humanity, as exemplified by the lunatics, the epileptics, the scrofulous idiots, the instinctive criminals, the deaf-mutes, the habitual drunkards and the suicides, is largely responsible for the condition in which we find the English-speaking world to-day; and unless

we make a serious attempt to teach the principles of general evolution to our boys and girls, no improvement can be expected. The time has arrived when physicians should speak out; the cure of disease may be a very good thing in its way, but the reduction of it by means of celibacy upon the part of the unfit would be of much greater benefit to the community at large.

THE PRESENT STATUS OF PRACTICAL ORTHOPEDICS.¹

By HENRY LING TAYLOR, M.D.,
OF NEW YORK.

FOR convenience the commoner affections which tend to cripple the framework of the body may be divided into the following classes: (1) Those due to anomalies of development. (2) Those due directly to violence. (3) Those due to pressure or overloading, commonly of weakened structures. This class may be subdivided into the rachitic and non-rachitic. (4) Those depending upon functional or organic nervous disease. (5) Those depending upon some pathologic process in or about a joint, or about the spinal column.

In the treatment of developmental deformities the indications are to correct malpositions, to restore the parts to their normal relations, and, while preventing relapse, to strengthen them by use within normal limits. Of the many congenital deformities only two need here be considered—pes equino-varus, on account of its frequent occurrence, and congenital hip luxation, on account of recent progress in its treatment.

In the case of ordinary clubfoot, treatment by manipulation should begin at once, and in the mildest cases this may suffice; in most, however, the bulk of the work will have to be done through mechanical correction. Whatever the means employed, the varus element should be first corrected, afterward the equinus. Many of the younger cases will do well under frequent applications of plaster of Paris, increasing the correction a little at each sitting. A very satisfactory method is to force the foot outward by a straight Judson brace, afterward correct the equinus, and retain by a Taylor brace; or the latter may be used from the start. The main point is to persist until the deformity is thoroughly overcorrected, after which the foot must be retained and used in this position until there is no tendency to relapse. The patient must be kept under observation for from one to several years. Relapses and unsatisfactory results are nearly always due to imperfect correction, or to too short a period of retention. If the case lags and

¹ Read before the Northwestern Medical and Surgical Society of New York.

ceases to progress under the plan of gradual molding or unfolding of the foot, resort should be had to forcible manipulation under an anesthetic, the massage to continue for from five to ten minutes or until the foot, taken between two fingers, falls readily into the overcorrected position. Tenotomies of the heel-cord and plantar fascia should be performed if necessary to complete reduction. This is a very successful procedure and often saves a great deal of time; it is ineffectual unless followed by thorough after-treatment. Severe operations on the bones or soft parts are rarely necessary when the above plan is faithfully carried out in children under six or seven years of age. In the obstinate deformities of adolescents and adults, very fair correction may be obtained at one or two sittings by means of special apparatus, such as the Bradford adjuster, combined with tenotomy, and followed by proper after-treatment. There is no more satisfactory class of cases; when seen early, all should be cured, and the old and neglected cases are capable of great improvement.

Congenital luxation of the hip may be due to defective development of the acetabulum or to a traumatism at or before birth. A few cases of cure from prolonged traction have been reported, but until operative reposition was begun by Hoffa and improved by Lorenz not much advance was made. Considerable success has followed the improved operation, which has been done over two hundred times by Lorenz. In the meantime, Paci of Milan brought forward a method of reduction by manipulation, which has recently been improved by Lorenz, and he claims very good results in appropriate cases. His procedure is as follows: The leg is brought down into a position of complete extension with abduction by very strong traction until the trochanter is at or below Nélaton's line. The thigh is then flexed to 90° , rotated slightly inward, and abducted to 90° , which jumps the head of the femur over the rim and into the acetabulum with a sound and a shock. The thigh is retained in strong abduction by means of a plaster spica extending to the knee, in order to prevent recurrence, and the patient is soon encouraged to walk with a high patten on the well side in order to mold the acetabulum. At subsequent dressings the abduction is lessened, and after six months or so the patient may walk with an inch extra sole on the well side. Reduction by this method has been performed one hundred times; it is applicable to the younger and unilateral cases. It is too recent for us to judge of the ultimate results, but it offers very great encouragement in this difficult class of cases.

Omitting, on account of lack of time, those deformities due to trauma, we take up the large and

important group of pressure deformities, where, owing to excess of load or, more often, to deficiency of resisting power, some part of the body framework yields and becomes deformed. This group includes flatfoot, weak ankles, bow-legs, anterior curve of the tibia, coxa vara, pigeon-breast, round shoulders, and lateral curvature of the spine. Nearly all of these deformities may be due to rickets, but they are very frequently due to other causes. Any condition which interferes with nutrition and vigor tends to laxity of fiber, and may result in a deformity of that part which bears the blunt of the load, especially during the period of rapid growth. The principles of treatment are to improve nutrition and muscular strength, and to mechanically shift the incidence of the load, so that it shall act as a correcting force, or when that is not possible, to rapidly correct the deformity by a surgical operation.

In bow-legs the tibiae are curved outward, or outward and forward, and the femora and knee-joints may contribute to augment the deformity. Relaxation of the external lateral ligaments of the knee-joints and pigeon-toes often accompany bow-legs. A certain amount of bandy-leggedness is natural to some infants, and this is often aggravated by allowing the child to walk when too young. In mild cases occurring in very young children the legs should be manipulated, and standing and walking limited. In mild cases of longer duration the outer side of the shoe in addition should be built up one-quarter of an inch. When this is not sufficient, and the patient is under four or five years of age, brace correction must be employed, the Knight brace being a good one for this purpose. Most of the mild and moderate cases may be cured by these means. In older patients, or in more obstinate cases, the tibia may be broken or chiseled and the deformity forcibly corrected. The operation usually performed in New York is a subcutaneous osteotomy at the point of greatest curvature of the tibia, which is usually at the junction of the lower and middle thirds. This operation is simple, is not severe, and with proper after-treatment usually cures the deformity.

Anterior curvature of the tibia is much more difficult to treat, and in very bad cases a cuneiform osteotomy is indicated. In both of these affections there is, in the milder cases, considerable tendency to spontaneous improvement, and in cases in which the deformity is arrested, natural growth will improve the shape of the parts.

Knock-knees show much less tendency to self-correction; relaxation of the internal lateral ligament of the knees, weak ankles, and valgus, or flatfoot, are frequent accompaniments. In mild cases, walking and standing should be limited, the legs manipu-

lated, and the inner side of the shoes built up one-quarter of an inch. In cases of moderate severity the Thomas knock-knee brace is often effective, while in older patients and in severe cases an operation is indicated, the preferable one being a subcutaneous osteotomy of the femur a finger's breadth above the condyles, either on the inner side (McEwen's operation) or the outer (McCormac's). The deformity is corrected by manual force after partially severing the bone, and a spica bandage is applied and allowed to remain for six weeks; the legs often require further support by braces or plaster. In general, the results are good or fair; partial correction, however, is not uncommon. An angle remains at the point of fracture, where it does no harm and is partially effaced by growth. Unless great care is taken in the after-treatment, recurrence may follow.

Owing to imperfect development and lack of vigor, weak ankles, with more or less abduction and eversion of the feet, are very common in city people, especially women and children. The conventional treatment with stiff-ankled shoes is perfectly futile.

The shoes, natural shape ("Waukenphast"), should be built up on the inner side, and the legs manipulated and exercised, with special reference to strengthening abduction, inversion, and flexion of the foot, and the general health should be improved.

The modern treatment of flatfoot is a notable improvement over that of a few years ago. Through the labors of Whitman and others, it is now recognized that this affection is a partial dislocation, often complicated by subacute inflammation about the pinched or stretched parts. In mild cases with little or no spasm, building up the inner side of the shoe in order to force the patient to bear more weight upon the outer border of the foot, and manipulations and exercises to favor inversion, abduction, and flexion, will often answer. In other cases, strapping the foot in the inverted position with adhesive plaster is of service. In obstinate cases, with considerable pain, spasm, and rigidity, the malposition must be overcome by forcible reduction under the influence of an anesthetic, and the foot put up over-corrected in plaster for three or four weeks. Occasionally, tenotomy of the heel-cord will be required in order to effect a perfect reduction. After the period of retention, a foot-plate should be made over a corrected cast, and the muscles strengthened by massage and special exercises. The results, even in these bad cases, which were formerly practically hopeless, are very good indeed. Comfortable, useful feet are the rule.

Round shoulders, like the other affections of this group, when not rachitic, are usually due to a se-

condary life, imperfect development, and lack of vigor. This defect is not confined to the trunk, but is general; weak ankles and flat feet are frequently associated with it. It should be remembered that this distortion primarily is not of the shoulders; it is first of all a sagging of the thorax, with posterior projection from lack of muscular tone, deficient chest expansion, and faulty attitude. The remedy is to correct these conditions by outdoor sports, general and special exercises, and tonic and hygienic treatment. Shoulder-straps and exhortations to throw the shoulders back are equally useless. These cases, especially if of long standing, or combined with considerable rigidity of the spine and thorax, are neither unimportant nor easy to treat. The vitality and endurance of an individual so affected is seriously compromised by his deficient chest capacity and breathing power, and it is well worth while to treat the condition seriously. A country life, or if that is not possible, an approach to the conditions of country life, with systematic special training to expand the chest and develop grace and flexibility of attitude and muscular tone, correction of the malposition, is usually followed by excellent results.

The subject of lateral curvature is easily the most difficult one in orthopedic practice. In spite of the extraordinary amount of ingenuity and study devoted to its elucidation, the best authorities have a very modest feeling in regard to their knowledge of its causation and treatment. This is not to say that many facts are not known regarding it, or that treatment is useless, for that is far from the truth; but the subject remains to be mastered. Lateral curvature is, of course, due to a variety of causes, some of them well understood, but the ordinary or idiopathic cases are here particularly referred to, in which no very obvious cause is apparent. In such cases we are in the habit of attributing the condition to muscular debility and habitual faulty attitudes, and no doubt they are partially to blame for it. Our inability to entirely correct the rigid bony deformity makes it exceedingly important that the mild and beginning cases should be recognized early and seriously treated, and one should not be deluded with the vain hope that it will be outgrown. Many cases are spontaneously arrested, with only a moderate degree of deformity, but we are as yet unable surely to distinguish such cases in their early stages from those that will go on to crippling deformity, unless checked by treatment. The mild and early cases do exceedingly well on tonic and hygienic treatment similar to that proper for round shoulders, with much attention to special corrective exercises and manipulations, and to the regulation of the daily life. It is frequently advisable to interrupt school-going for a

time, and to prescribe short daily periods of recumbency. Piano practice I have found to be specially harmful, and it should always be stopped; singing, on the other hand, is beneficial. Cases of moderate severity, with considerable spinal rigidity require more energetic treatment, and for longer periods; some form of suspension may be used in order to increase spinal flexibility, and for some the pressure frame is useful. Apparatus and jackets are not to be employed unless the curvature is increasing, and this should be determined by accurate measurements from time to time. In these cases of medium severity the health may usually be improved, chest expansion, spinal flexibility, and muscular strength increased, and the attitude and appearance of the patient improved, but a considerable amount of curvature still remains at the end of our labors; in favorable cases, however, this is so slight as to be unnoticed under the clothing. In the bad cases, which get worse in spite of treatment, some kind of supporting apparatus must be worn; this should always be combined with daily developing and corrective exercises. Many of these patients, after a long period of treatment, may be able to dispense with their apparatus, and lead active and useful lives free from suffering and with fairly presentable figures. A few cases, usually those seen late or complicated with paralytic or other serious affections, go on to extreme deformity.

The group of crippling disorders, the seat of which is principally in the nervous system, is a large and important one, but only two need be considered here, namely, poliomyelitis anterior acuta, and the infantile cerebral palsies; these are chosen mainly for the reason that while both affections are essentially incurable, orthopedic treatment is of great benefit. The indications for treatment are to prevent or correct deformity, to improve local circulation and nutrition, and to bring crippled parts into action, while preventing undue strain on weakened muscles and flaccid joints. The problem confronting one in both affections is that of educating, disposing, and correlating intact, or measurably intact, parts in such a way as to fit them for the best service of the individual. On the same principle that the hand in wrist-drop, or the cheek in facial palsy should be supported to prevent the deleterious effects of traction upon palsied muscles, so a drop-foot, or other deformity of the limb, should be forestalled and the muscles allowed to recover their tonicity, so far as they are capable of doing, by the use of proper mechanical appliances. These should always be so arranged as to bring weakened muscles into action; it is the unbalanced pull of the stronger muscles that is to be limited. Much permanent damage may be

done by permitting the vitality to be stretched out of muscles which are weakened but still active, by the unopposed drag of gravitation or the unbalanced pull of their antagonists. When seen early, available muscular integrity may be preserved, and serious deformity prevented. Such management gives the greatest effect to efforts to promote local nutrition by electricity, hot air, and massage. Children affected in this way often do great harm to their feet and knees in their efforts to walk unaided, when the adjustment of proper apparatus would be of the greatest benefit. Deformities which have already occurred should be corrected by mechanical or surgical means and relapse prevented.

The operation of tendon-grafting, which has recently come into prominence, is capable of doing considerable good in properly selected cases. It consists in attaching the tendon of an active muscle to that of one which has lost its power. The active tendon may be split, so as to pull upon both its old and its new insertion. The operation of arthodesis, or joint stiffening, has proved only moderately successful in infantile paralysis.

In cerebral palsies contracted tendons should be divided, as tenotomy not only permits the correction of the deformity but to a marked degree allays spasm and tends to restore the muscular balance. This will improve locomotion, and in some cases enable perfectly helpless patients to walk, and at the same time will exercise a happy effect upon the mental condition. When these measures go hand in hand with exercises and training to promote muscular control, marked improvement usually follows in all but the worst cases.

Functional nervous disorders may mimic almost any crippling affection, and often require more skill in their treatment than the disorders they suggest. Many cases of weak, tender, or aching back belong in this category. The condition of the bedfast or semibedridden neurasthenic appeals strongly to our sympathy; these are border-line cases—the treatment of which few care to undertake. I mention them here only to say that I have usually found them very amenable to energetic and systematic treatment.

There is still left the very important group of affections tending to cripple through inflammation or disease of the spinal column, or of one or more of the articulations. These joint troubles may be traumatic, tuberculous, suppurative, rheumatic, gonorrheal, syphilitic, tabetic, or may follow the acute infectious diseases. The indications for their treatment are to eliminate systemic poison when present, to allay pain, build up the system and improve the quality of the blood by the oxygen of the open air, diet, and medicaments, and to arrest

the local morbid process by means of enforced local rest, and the application of fixation and traction splints, with longer or shorter periods of recumbency. While the local process is subsiding, deformity must be prevented or overcome, and the articulation restored, so far as may be, to its proper function. The large majority of tuberculous spines and joints get well under faithful and persistent treatment. Something like ten per cent. of the patients afflicted in this way succumb to the morbid process or to complications. Diseases of the larger joints, when seen early, often recover without serious deformity or interference with function; sometimes without any. In the spine the result is less frequently so favorable. Patients suffering from a more advanced type of the disease in which loss of substance has already occurred, may, and usually do, recover with more or less stiffness, deformity, and disability, but still with very useful members. Those suffering from the worst form, and those in whom the condition is neglected, die, or recover with crippling deformity.

Excision has rather a restricted field in these cases. The results are better at the knee than at the hip. For patients who remain deformed after the cure of their disease, much may still be done to alleviate their condition. In fibrous ankylosis the flexed hip may often be mechanically stretched out, or forced down by careful manipulations. In severe adductions the long median abduction splint has given much satisfaction. If the union is a bony one, the femur may be chiseled below the lesser trochanter (Gant's operation), a procedure giving excellent results. At the knee, Bradford and Goldthwaite's method of forcible mechanical correction gives excellent results in apparently hopeless cases of angular deformity. Where there is bony ankylosis, resort must be had to excision. True pus must be evacuated whether in a joint or in the soft parts, but the collection of tuberculous detritus known as cold abscess does not call for summary treatment. Provided the original lesion is properly treated, the patient will do well, whether the abscess is evacuated or not; he is quite likely to do badly in either case if the diseased joint is neglected. Iodoform-ether and other injections are useful in old sinuses, even when they communicate with bone, but deep injections into the undrained joint or its neighborhood are quite as apt to do harm as good.

Leprosy in North Dakota.—The Surgeon-General of the Marine Hospital Service in Washington has been informed of the existence of two cases of leprosy in Walsh county, North Dakota. The disease is said to be well developed. Both of the patients are Scandinavians.

TYPES OF EDEMA IN INFANCY AND CHILDHOOD.¹

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EDEMA, developing in early childhood, and especially in infancy, is sufficiently uncommon, as compared with its greater frequency in adults, to render its occurrence a matter of interest, particularly as its etiology is often so very obscure at this time of life. Our attention has been turned in this direction through a series of cases recently under observation, in some of which it was most difficult to determine the true nature of the affection.

In studying edema as presented in early life one's thoughts naturally turn first to the possibility of the presence of nephritis. That this disease may occur in the very young has been amply shown by many writers, notably by Jacobi², and by Felsenthal and Bernard.³ We ourselves have witnessed it repeatedly. Scarlatina is certainly one of its commonest causes, but it is well to remember that other infectious diseases, as measles, erysipelas, malaria, pertussis, diphtheria, and varicella may be accountable for the renal inflammation, and that eczema and other cutaneous eruptions appear to be the cause in occasional instances. Intestinal disease is not infrequently the exciting factor in infants. Often we can discover no cause for the renal disorder, and sometimes we may be able to surmise only; as, for instance, when slight traces of redness or of desquamation indicate that possibly an erysipelas or a scarlatina had previously been present.

That congenital syphilis is capable of producing nephritis and consequent edema is not yet universally admitted, although there are cases on record which appear to prove this with reasonable certainty. Yet these cases are rare. Audeoud,⁴ in a recent careful paper, was able to collect but six instances, besides one reported by himself, of what seemed to be undoubted nephritis from congenital syphilis, as judged by the symptoms during life. The cases reported are those of Bradley,⁵ Potain,⁶ Coupland,⁷ Massalongo,⁸ and Hock.¹⁰ In four cases autopsy confirmed the clinical diagnosis, and in three the evi-

¹ Read at the Twelfth Annual Meeting of the Association of American Physicians, Washington, D. C., May 5, 1897.

² *New York Med. Jour.*, lxi, 65, 1896.

³ *Arch. für Kinderheilk.*, xvii, 222, 1893.

⁴ *Rev. Med. de la Suisse Rom.*, August 20, 1896.

⁵ *Brit. Med. Jour.*, i, 116, 1871.

⁶ *Gaz. des Hôp.*, 1201, 1878.

⁷ *Brit. Med. Jour.*, Jan. 31, 1880.

⁸ *Transac. Path. Soc.*, xxvii, 393, London, 1875-76.

⁹ *Ann. de Derm. et de Syph.*, 1148, 1894.

¹⁰ *Sem. Med.*, 475, 1894; *ibid.*, 99, 1895.

dences of nephritis and of syphilis disappeared under antisyphilitic treatment.

The two following cases observed by us are of interest in this connection:

CASE I.—J. J., two months old, mulatto; seen for the first time January 21, 1897. The father acknowledged no symptoms suggestive of syphilis. The mother was apparently healthy and had had no miscarriages. Three other children were alive and well. When a month old the patient had some sort of erythema, which appears to have been slight and limited in extent. One week before his first visit he developed a bad attack of coryza. On examination, the child was seen to be of fairly healthy appearance. The nostrils were filled with a thick discharge which interfered with respiration. On January 27th, a desquamation was noticed over the hands, feet, face, and forearms. This was of a distinctly peeling character, suggesting scarlet fever; but interrogation of the mother failed to elicit the history of any eruption which would satisfactorily account for the symptom. A flat, macular, pale-red eruption, having all the appearances of syphilis, was present over the nates and especially about the anus and to a less extent over the thighs and about the knees. There was some excoriation about the anus. The nasal discharge was unabated. On January 29th the condition described was practically unchanged, and there was in addition evident edema of the lower extremities, and to a slight degree of the face also. Inunctions of mercurial ointment were ordered. This treatment was changed on February 1st to gray powder, internally, owing to the dermatitis which had been produced. Improvement began and continued slowly. By February 13th, the edema was scarcely noticeable in the face, though still present to some extent elsewhere. The anal excoriations were healing and the rhinitis was much better. By February 16th, the syphilitic eruption had nearly disappeared, and there was no more scaling, but still a little general edema. Examination of the urine made about this time showed quite a thick ring of albumin with Heller's test. Decomposition had advanced too far to permit of finding casts if present, but some leucocytes and small epithelial cells were observed. The child was seen for the last time on February 24th. It was then better in every way, although some rhinitis and edema were still present.

In this instance it seems impossible to determine absolutely whether the cause of the nephritis was syphilis or scarlatina. The whole complex of symptoms, however, and the recovery under antisyphilitic treatment, leave us in little doubt that the nephritis was syphilitic.

The second case appears to be an undoubted instance of syphilitic nephritis, in spite of the failure to procure urine for examination.

CASE II.—Baby R., male, born July 25, 1896. The mother appeared healthy; the father acknowledged having syphilis, and presented symptoms of the disease. The child was small, thin, and weighed but

4¾ pounds. The skin of the feet and hands looked as though blistered, was cracked, and came off like a glove, leaving a raw, bleeding surface. Over the body, but especially on the limbs and around the mouth, nose, and anus was an annular eruption, varying from pin-head to small-pea size. Coryza was present. Mercurial ointment was applied on the binder. On July 27th, the eruption had become pustular, with thick crusts and fissures about the nose, mouth, and anus. Some small aphthous patches were present in the mouth. The child improved slightly, but on August 3d dropsy appeared in the legs, and by the next day involved the lower extremities, face, and abdominal cavity. Under the continued use of mercurial ointment, combined with diuretics, the edema rapidly disappeared, as did the cutaneous symptoms later, and the child steadily improved in health, gaining two pounds by September 4th. It has continued well since that date.

In addition to the causes of nephritis mentioned, there seems no reason why a general septic infection should not produce severe parenchymatous changes in the kidneys. The following case appears to be an instance of septic nephritis: The origin of the infection could not be discovered. All the tissues of the body were examined except the bones, and it is possible that a septic inflammation of these may have existed. The case occurred in the service of Dr. J. C. DaCosta in St. Agnes' Hospital, Philadelphia, where we had the opportunity of seeing it. For the notes of the autopsy we are indebted to Dr. A. O. J. Kelly, pathologist to the hospital.

CASE III.—Eleanor M., born October 10, 1896. Weight 7¾ pounds. Except for slight ophthalmia and coryza, from both of which she recovered promptly, the child was entirely well until December 31st, when feverishness and malaise developed. On January 1, 1897, the evident illness had increased; there was decided pallor, and the right leg from the knee down was swollen, as was also the vulva. The latter was red and angry-looking, yet without the appearance of erysipelas. By January 2d, the edema had extended to the thigh, and on this day or the next a swelling appeared over the left parietal bone. On January 3d, swelling of the left elbow-joint set in.

We saw the child on the morning of January 4th, and found it very ill, seeming to suffer pain and crying weakly if disturbed. It was of a waxy pallor, with a slight icteric hue, and the conjunctivæ were decidedly yellow. On the left parietal prominence was a large projecting swelling, very hard, and the size of a walnut. The eyelids, both upper and lower, were edematous, making the eyes appear deep-set and small. The rest of the face was slightly swollen. The left elbow presented a spindle-shaped swelling, somewhat tender but not red. The right leg and thigh were very edematous throughout, the swelling being tense but without redness. Both external labia were swollen but not discolored. Nothing abnormal could be discovered about the bones of the lower extremities. The ribs were slightly beaded.

Examination of the liver and spleen gave negative results. A stool passed during the examination was formed and almost white. No temperature record was kept. The child died a few hours later. Urine taken from the bladder after death contained about one-sixteenth albumin by bulk, with leucocytes and numerous bacteria, but no casts could be found, the decomposition having doubtless destroyed any which might have been present.

The autopsy showed that the parietal swelling had flattened very much after death. Pus was discharged on incision. The left elbow-joint was very much swollen, the bones being loosely attached and giving a rough sensation when rubbed together. The joint contained pus. The external genitals were much swollen. The right lower extremity was greatly swollen, pitted on pressure, and on incision discharged a clear serous fluid. The crural vessels were normal. The thoracic viscera showed nothing worthy of note except that the heart-muscle was flabby, friable, and yellowish-red in color. Incision of the abdominal cavity revealed an acute general peritonitis with recent adhesions and a seropurulent fluid with flakes of lymph. The spleen was much enlarged, very soft, and dark reddish-brown; the liver enlarged and slightly fatty; the kidneys enlarged, soft, pale-yellowish in color, with reddish areas, and with the cortex thickened. The other abdominal viscera and the internal genitalia were normal. Microscopic examination of the organs showed slight fatty degeneration of the heart-muscle and of the liver. There was general hyperplasia of the elements of the spleen. Many of the epithelial cells of the convoluted tubules of the kidneys had desquamated, and many had lost their outline, and the nuclei stained little if at all.

Children may develop an edema, more or less general, in which no distinct evidence of nephritis exists. For instance, it sometimes happens that erysipelas neonatorum will leave a comparatively extensive dropsy, yet without signs of renal disease. Sometimes scarlet fever is followed by dropsy yet without albuminuria. Quincke¹ refers to an epidemic of scarlet fever occurring in Berlin, described by Phillip, in which anasarca developed in about one hundred cases, and in at least sixty of these no albumin could be discovered in the urine. Goodhart,² also, has reported similar cases, and warns against the hasty conclusion that nephritis is not present because there is no albuminuria. Dickinson³ reports some interesting cases in which no cause whatever could be discovered for the widespread edema, and in which there had certainly been no scarlatina, and no albumin could be found in the urine, yet in which autopsy showed the existence of nephritis.

As in adults, localized edema may occur as the result of pressure upon venous trunks. This is per-

haps oftenest due in children to the existence of enlarged bronchial glands. The existence of valvular cardiac disease may produce a general edema in early life. So, too, any state of extreme exhaustion, debility, and anemia may be attended by a marantic edema, during which no albumin may be found in the urine. In our experience, this is proportionately much less common in infants than in adults, if we take into consideration the vast number of instances of marantic states which occur in early life. The causes of this edema at any time of life are the same; *viz.*, a hydremic state of the blood and a tendency for the serum to leak through the vessel walls. Some of the cases have been proved by *post-mortem* examination to be entirely free from renal disease, but in other instances the reverse is true.

In this connection we may refer to the strange disease known as edema neonatorum. As Ballantyne¹ has well pointed out, this is rather a symptom of several conditions than a pathologic entity. But until we understand the matter better it is convenient to classify these conditions together under the one name. As ordinarily described, edema neonatorum usually occurs in very weakly or premature infants. It generally, but not necessarily, begins before the third day of life. It is characterized by low temperature, coldness of the surface, and a widespread edema, which pits on pressure, although with difficulty. The child is apathetic and unable to nurse; the pulse and respiration slow and weak. Death nearly always takes place, but recovery is occasionally observed.

Whether or not edema neonatorum is to be considered identical with sclerema neonatorum, has been, and still is, a much disputed question. Parrot believed them different, and Ballantyne and others share this opinion, while, on the other hand, many describe them as identical or at least as forms of the same affection. There seems, we think, good reason to believe them entirely different, and it is even a question whether sclerema is justly to be classified as an edema of any sort.

Edema neonatorum and sclerema neonatorum are alike in their development in feeble and often in premature infants, in the low temperature present, and in the excessive weakness seen, but in sclerema the skin is hard and will not pit, cannot be pinched up into folds, is often discolored, seems adherent to the subjacent parts and will not exude serum when cut at the autopsy. There is also rigidity of the whole body. It is certain, however, that the two diseases may be associated in the same case, as Parrot states.

Sclerema begins oftenest during the first two

¹ *Berlin. klin. Wochenschr.*, xix, 57, 1882.

² *Guy's Hosp. Rep.*, xxvii, 197, 1884.

³ *Trans. Path. Soc.*, xxi, 255, London, 1870.

¹ *Brit. Med. Jour.*, i, 403, 1890.

weeks of life, but may not develop until later. The induration is limited at first, but spreads rapidly over much of the body. A discoloration of the skin is often present, as already stated. Although often confounded with it, the disease is to be distinguished from scleroderma, which is a chronic, usually localized, and generally not especially dangerous affection of the skin.

Various theories have been advanced to explain the hardening of the skin in sclerema, one being that it depends upon a thickening of the subcutaneous bands of connective tissue. Possibly, also, it is due in part to a solidification of the fat, dependent upon its different constitution in very young children, as claimed by Langer.¹

The following case of sclerema recently came under our observation:

CASE IV.—John C., Italian, fifteen days old. The father and mother and two of their children were living and well. Two other children had died from causes unknown. The patient was said to have been ill for a week with rapid respiration and a cough, and had vomited milk at times. He was taken to one of the Philadelphia hospitals where the diagnosis of pneumonia was made. No careful examination was made of the surface of the body, but slight subconjunctival hemorrhage was noticed. On the same day, or possibly the following day, the child was taken to the Children's Hospital, Philadelphia, where he was admitted February 6, 1897, at about 1 P.M. He was apparently in a dying condition, being cold, stuporous, and pulseless, with corneal reflex scarcely obtainable. The temperature in the rectum was 93.8° F., and the respiration 48. The mother called attention to the hardness of the child's cheeks, which she said she had noticed on that day for the first time. Ecchymotic spots were present on the eyelids, and these, the father maintained, had been there since birth. Discoloration of the nates, resembling bruises, was observed. This, the father insisted, had not been present before the child's visit to the hospital referred to.

The child was at once put to bed and stimulants and external heat employed. After some reaction had occurred, the chest was examined and the physical signs of pneumonia found. At 6 P.M., his temperature was 94° F., and respiration 42. During the night following, the child had a convulsion. We saw it for the first time on the morning of the next day, February 10th, when it presented the following condition: It was evidently extremely ill and lay for the most part perfectly still, with the eyes half closed. Respiration was rapid and shallow, the pulse feeble, the color pale and slightly cyanotic. Slight subconjunctival hemorrhage was present, and some small ecchymotic spots on the eyelids. Both cheeks appeared rather full, and on examination were found to be much thickened and of stony hardness, without the slightest pitting on pressure. There

was no discoloration of the parts. Examination of the inside of the cheeks with the finger revealed nothing abnormal. Over the buttocks, lower part of the back, and upper part of the thighs, the tissues exhibited the same indurated condition, with a bluish, and in some places yellowish discoloration, exactly resembling the colors of a bruise a few days old. This bruised appearance was best developed in the neighborhood of the anus. The thighs were hard and rigid, but not discolored except in the upper parts. During the morning of February 10th, his temperature rose to 101° F. (possibly aided by the continued application of heat), he had a few convulsive movements, and died at noon.

No autopsy was allowed. Examination of the surface of the body after death showed that the blue color had faded to a slight extent. A faint bluish discoloration had appeared over a small area near the navel. The induration of all the affected parts was unchanged, except being a little less marked over the nates. The bladder was aspirated to obtain urine for examination, but without success.

Sclerema neonatorum is rare in all parts of the world. We have looked through the medical literature at our command in order to discover the cases reported in America and have found but few. Some of these are of rather doubtful nature, while others are merely referred to in the discussions which took place of some of the papers contributed upon the subject. We have found but five fully detailed cases which exhibit the complex of symptoms usually considered characteristic of the disease. We have epitomized them as follows:

A. H. Robinson (*Arch. of Dermatol.*, viii, 337, 1882): Well-nourished boy, seven months old, had many convulsions during the first day of life and intense jaundice on the third and fourth days. On the second day of life induration appeared over buttocks and extended half way down outer aspect of thighs. Affected skin not unusually pale, and not cooler to touch; moderately edematous. Temperature taken once registered 101° F. Child steadily improving at time of report.

In the discussion of this case, Weisse referred to two instances of the disease seen by him, in one of which the induration began at the back of the neck and extended all over the body and the back of the legs. Both patients recovered. Piffard said he had seen one case. Taylor had seen two cases, both in children two to three weeks old, and both terminating in recovery. The disease extended over the entire body.

In the absence of further details the suspicion is strongly aroused that the cases referred to in the discussion were instances of some form of edema, and not of sclerema.

Ellen A. Ingersoll (*Peoria Med. Monthly*, viii, 240, 1887-8): Mother alcoholic. Boy, well developed at birth. On third or fourth day of life scrotum and anterior surface of thighs became swollen and hard, the skin and subcutaneous tissues being involved. The affection spread over lower extremities, then attacked face and neck, then chest and upper extremities. Death within forty-eight hours, apparently from involvement of muscles of respiration and deglutition.

¹ Wiener Sitzungsbericht., 1881.

W. P. Northrup (*Transac. Amer. Ped. Soc.*, i, 140, 1889): Girl, five days old, one of twins, weight seven pounds. Feet puffy, rectal temperature 96.5° F., and remained low. Examination two days later showed induration throughout lower and upper extremities, hips, shoulders, scalp, and face; most marked on thighs, arms, and cheeks, least so on abdomen; color brownish-yellow. Body stiff and very cold, as though frozen. Rectal temperature would not reach lowest figures of the thermometer, i.e., 96° F. Died on ninth day of life. Autopsy revealed no edema; tissues cut hard; microscopic examination of skin showed nothing abnormal.

In the discussion of this case Huber said he had seen a fatal case in a child several months old. The symptoms were identical with those described by Northrup. Koplik said he had seen cases. Holt reported a doubtful case in a child thirteen days old, in which scattered sclerematous patches appeared over the shoulders, back, arms, neck and in the cheeks. The temperature was not subnormal. At the end of five months the patches had nearly disappeared. [Later, Holt ("Diseases of Infancy and Childhood," p. 117, 1897) says he has seen five cases.]

L. F. Barker (*Trans. Amer. Ped. Soc.*, v, 142, 1895): Boy, well developed at birth, taken with pneumonia when nearly nine weeks old. On the eighth day of this illness skin of buttocks was found to be hard. By the next day whole body was of woody hardness; skin could not be picked up and was cold; limbs rigid; power of swallowing lost. The scrotum was the only portion not affected. The child died on the succeeding day. Temperature during the attack of sclerema was not depressed, and on one occasion reached 102.5° F. Autopsy showed skin of marble whiteness without pitting on firmest pressure. It creaked when cut. Microscopic examination showed principally swelling and thickening of the fibrous bands of skin and subcutaneous tissue.

In the discussion of this paper Jacobi stated that he had seen a few cases.

J. L. Porteous (*New York Med. Jour.*, lviii, 442, 1893): Infant (sex not stated), developed the disease when two days old. When seen on the fourth day of life skin of legs, feet, arms, hands, back of shoulders and upper part of chest "had the feeling of india-rubber stretched over a frame." Color varied from deep purple to pink. Cry feeble, respiration seemed difficult; child stretched itself frequently "as if it felt stiff all over." Temperature 97° F. Constipation obstinate; punctures of skin let out only a little blood and yellowish fluid. On sixth day of life temperature fell to 87° F., and child died.

In addition to these cases there are two which have sometimes been considered instances of sclerema, but which cannot properly be placed in this category. They are as follows:

C. D. Smith (*New York Jour. of Med.*, xii, 190, 1854): Male child, presumably more than a year old; well when born. At age of six weeks developed swelling of the right hand, which progressively increased for six months, and then remained unaltered without extending. Child still living and in excellent health. Induration was hard as marble, with the local temperature lower and the color whiter, but sometimes purplish. It was painless and would pit on pressure.

C. C. McDowell (*Maryland Med. Jour.*, i, 203, 1877): Child three weeks of age had "the dermal lesion," involving the cutaneous surface largely (but a nearer description is not given). Subject to attacks of partial pulmonary collapse, and with these the dermal lesion was

"always exacerbated." It recovered after four or five weeks.

We have still to refer to that curious condition, angioneurotic edema, as it was first called by Quincke. This affection, not particularly common at any period of life, is certainly uncommon during early childhood and especially during infancy. The following case seems properly to belong in this category:

CASE V. — Andre P., aged two and one-half months, of apparently healthy Italian parentage. The history could be obtained only with the greatest difficulty. It appeared that two other children were living and well. The patient apparently was well and properly developed when born, and remained in good condition until about one and one-half months old, when red blotches began to develop on different parts of the body. These would last only a few hours in any one spot and be followed by edema. The redness and edema shifted from spot to spot, lasting a few hours to several days altogether. The bowel movements had been loose and green for about a week before the child was seen by us.

The first examination, made June 18, 1896, showed the child to be much emaciated and decidedly anemic. The heart and lungs appeared to be normal. The right hand and forearm were edematous, pitting on pressure, and of normal color except for a glassy appearance. This condition was said to have been present for four days. The right leg and foot were swollen, and the mother stated that they had been more so, and that the genitals had been swollen also. The right side of the face was flushed and slightly harder than the left, but there was no distinct edema of the face, although it was stated that there had been some earlier that morning. The child's temperature was 100° F. The urine did not contain albumin. On June 19th, the left little finger was edematous and glassy in appearance. The redness of the face had disappeared. The right hand and leg were much swollen. The temperature was 99.2° F. On June 20th the edema of the left little finger and of the right hand and forearm had disappeared and that of the right leg was much better. There was a swelling over the right biceps, which had developed during the night. It was the size of a walnut, red, painful, and very hard. His temperature was 100.2° F. A second examination of the urine was negative. By June 22d all edema had disappeared except over the biceps, where it was somewhat more extensive and still slightly red. By June 25th this was less red, more glassy and very painful. The disturbance of the bowels had continued more or less from the first visit.

The child was lost sight of until July 17th. Then it was learned that the swelling on the upper arm had seemed obstinate in disappearing, and that the child had been taken to some hospital. There it was supposed that an abscess was present and an incision had been made, but as far as could be learned no pus was discharged. The child was still thin, but appeared well in other respects.

Angioneurotic edema is certainly closely allied to

urticaria, and, in fact, is probably identical with the so-called giant urticaria. It is certainly related to some of the manifestations of peliosis rheumatica and to Henoch's purpura. The following case, occurring in a child, illustrates a condition which might be described either as angioneurotic edema or as purpura urticans. The element pointing toward the former is the fact that the edematous part of the body was but little affected by the urticarial eruption.

CASE VI.—Barty C., five and one-half years old. On the evening of March 2, 1897, he developed a rash on the back and abdomen which strongly suggested measles, yet without the characteristic grouping, and with the presence of a few urticarial wheals. On March 3d the rash of the day before had become purpuric, and there was an additional development of a widespread erythema, with wheals. The face was very edematous, not flushed, and looked like typical nephritis. By March 4th the eruption was rapidly fading and the edema better, and by March 5th all symptoms had disappeared. Repeated examination of the urine had shown nothing abnormal.

The chief characteristic of angioneurotic edema is expressed by the definition "acute, local transitory edema." It is possible, however, as some cases have shown, for the edema to be more persistent in character. As a rule, the swelling appears suddenly upon some part of the surface, perhaps always the same in each attack, or varying in locality in different attacks, or leaving rapidly one part to develop suddenly in another. It lasts for hours or days. Gastro-intestinal disturbances not infrequently accompany the swelling. Heredity has a very decided influence in many cases. Exposure to cold is often an active exciting cause. The disease is probably a vasomotor neurosis, as Quincke maintained. It is associated in some way with forms of urticaria and of purpura, as the case just detailed exemplifies.

Angioneurotic edema developing early in life is rare, as we have said; yet it is noteworthy that one of the first reported cases (Dinkelacker) occurred in an infant. We have made some search, although not exhaustive, through medical literature for cases beginning during early life, but have found few. Very briefly abstracted they are as follows:

Dinkelacker (*Inaug. Dissertation*, Kiel, 1882): Boy of one year; had attacks of local edema from the age of three months. The father was also subject to the disease.

Falcone (*Gaz. degli Ospedali*, vii, 125, 1886): Boy of seven years; had well-marked attacks. His grandfather also had the disease.

Widowitz (*Jarhb. für Kinderheilk.*, xxv, 252, 1886; xxix, 388, 1889): Three cases. (1) Girl of seven years, in whom attacks of edema of nose, cheeks, and fingers had occurred since age of four years. (2) Boy of eight years, in whom attacks of edema of fingers and cheeks occurred from exposure to cold since age of six years. (3) Boy of six years, with swelling of face, and often of fingers, resulting from cold.

Johnston (*Amer. Jour. Obstet.*, April, 1885): Five-year-old girl; affected since three months old. Feet and hands grew red, swollen, and painful. Attacks brought on by exposure to cold.

Josephs (*Berlin. klin. Wochenschr.*, No. 4, 77, 1890): Five-year-old boy; affected since age of 2½ years. Swellings of unclothed parts when in cold wind. He had had an attack of hemoglobinuria. An eight-year-old cousin had similar swellings.

Loimann (*Wien. Med. Presse*, 753, 1888): Six-year-old boy; affected for three years. Attacked eyelids especially. Later, face and genitals.

Graham (*Ann. of Gynec. and Pediat.*, April, 1894): Child of seven years and nine months; affected since one year old. Frequent swelling of eyelids and face.

Mooney (*Detroit Med. Age*, xiv, 10, 1896): Girl of nine years. Backs of hands attacked.

Yarian (*MEDICAL NEWS*, August 29, 1896): Woman had had attacks from childhood. Edema, with vomiting, epigastric pain, and weak pulse. Mother had attacks from childhood. Maternal uncle affected. A girl cousin had attacks of edema. Boy cousin had the disease and died at age of seven. Maternal greatgrandfather and grandfather and some of the great uncles had periodic edema.

Gevaert (*Rev. Mens. des Malad. de l'Enfance*, xii, 369, 1894): Girl of three years; had transitory edematous tumor of left side of neck.

Osler (*Amer. Jour. Med. Sci.*, xcv, 362, 1888): Family history of five generations; twenty-two persons affected. Among them one man suffered from his youth; one girl of ten or twelve years was affected; one girl began to suffer when four or five years old; one girl had swollen legs ever since she was a small child.

Henoch (*Vorles. ü. Kinderkr.*, 8 Aufl., 612): Four cases reported, the first evidently belonging here; the others not so certain and not called angioneurotic. (1) Girl of four years; attacks of edema of feet, hands, and face, with malaise and vomiting. (2) Girl of four years; attack of edema of face and feet from exposure to cold. Pain in feet; anorexia and slight fever. (3) Boy of nine years; an attack of edema of face, scrotum, and prepuce. No cause found. (4) Child of four years; an attack of edema of face and thighs. No cause found.

Rotch (*Pediatrics*, 484, 1896): Two cases. (1) Boy of 2½ years. First attack at nineteen months. Eating of eggs would cause edema of eyes. (2) Boy of three years. Edema of hands. Attack ceased after circumcision of tight prepuce.

Masterman (*Brit. Med. Jour.*, i, 846, 1897): Boy of eight years. Severe edema of left leg and arm, and of eyelids, with purpura and pain, then of right arm with fresh purpura and severe pain. Later, an attack of dysentery.

There are, finally, the cases of edema occurring during infancy, which are of entirely doubtful origin and nature. We have already referred to the element of doubt attending many cases. Milroy¹ reports an interesting family history, in which, out of ninety-seven individuals in six generations, twenty-two had been affected. The edema involved one or both legs, and was permanent. It was congenital in origin except in one case, not beginning in this until the age of twelve years. These cases were believed by Osler to be allied to angioneurotic edema; but Mil-

¹ *Omaha Clinic*, v, 101, 1892.

roy believed them rather to be dependent on some congenital absence of valves in the veins. They certainly do not present the complex of symptoms of angioneurotic edema.

The following instance of edema is allied in some respects to those of Milroy; and, like them, its nature seems entirely obscure. We had the opportunity of seeing the patient through the kindness of Dr. Arthur Van Harlingen.

Benny S., four years old, seen January 27, 1897. The mother was healthy in appearance. There was nothing of note in the family history. Several other children were entirely well. The mother stated that the child was well when born, and remained so until he had measles at three months of age. The testicles and scrotum were said to have been very large at birth, but this enlargement disappeared later. At three months of age, or shortly afterward, swelling of the left leg and of the face began, and this has continued more or less ever since. At times the eyes have been so swollen that the child could hardly see. The swelling of the leg was constant, and, as it would appear, varied less than the swelling of the face. The operation of ritual circumcision had left edema of the remains of the prepuce. The child had always been normally bright. The mother stated that the urine had been examined repeatedly and nothing ever found wrong with it.

Examination showed a child well-developed bodily for his age, but rather pale. The intelligence seemed to be entirely normal. The head was slightly asymmetrical, one parieto-occipital region being slightly flatter than the other. The bridge of the nose was unusually broad and rather flat, this appearance being distinctly added to by a decided edema of the tissues about the bridge. The eyes had rather a peculiar, deep-set appearance, this being due possibly to the edema of this portion of the face. The left ankle and leg were swollen, giving the member a cylindric form. The edema would not pit on pressure, and was so firm that at first it seemed as though the tibia itself was greatly thickened, but further examination made it reasonably certain that the bone was of natural size. The child had coryza at the time of the examination and the voice was rather nasal. The examination of the urine a short time later was entirely negative in its results. Under treatment by pressure with medicated plasters the edema of the leg diminished considerably. The patient then disappeared from observation.

The peculiar persistence of the edema, and especially the localization to so great an extent in the left leg, made the case very obscure; and this obscurity was added to by the firmness of the swelling there. The expression of the face was decidedly suggestive in some respect of cretinism, yet there were no other symptoms which supported this diagnosis. We are entirely unable to account for the condition.

The following instance of edema of doubtful nature

occurred in the Children's Hospital, Philadelphia, in the service of Dr. Alfred Stengel, where we repeatedly studied the case.

Harry B., twenty-three months old; admitted November 7, 1896. Family history negative. Previous personal history good. The present illness began five weeks before with fever, diarrhea, cough and cold extremities. On entrance to the hospital it was found that the child's liver was enlarged, and there was dropsy of the feet, eyelids, and abdominal cavity. The urine did not contain albumin. Examination on the following day showed the child to be evidently very ill, with cyanosis, great dyspnea, edema of the lower extremities, and to a less extent of the hands, and with physical signs of fluid in the abdominal and right pleural cavities. The heart-sounds were practically normal. There was no evidence of pulmonary consolidation. The blood examination gave 65 per cent. hemoglobin, and 3,500,000 red blood-cells to the cubic millimeter. The liver extended almost to the umbilicus. This was apparently due partly to displacement by the pleural effusion and partly to actual enlargement.

Under the administration of digitalis and purgatives the fluid disappeared from the abdominal cavity and the limbs, but that in the right pleural cavity continued to a considerable extent. On November 14th a second examination of the urine was made, with negative results. On November 24th the fluid was still present in the right pleural cavity but in less quantity. By November 30th it was decreasing here, but at about this date it was also found to be accumulating in the left pleural cavity. By December 11th fluid was still present on the left side, and to some extent on the right. The child's temperature up to this date had ranged from 99° to 100° F., but it now rose to 103° F., and varicella developed. This ran a moderately severe course, but disappeared without any sequelæ, the temperature now ranging about 99° F. By December 20th the child was improved very much in every respect, although fluid was still present in the left pleural cavity. By December 31st no fluid was to be discovered. He was discharged cured on January 4, 1897.

The origin of the edema in this case was at first entirely inexplicable. There existed no especial degree of malnutrition or anemia which could account for it, or any albuminuria or evidence of an inflammatory process anywhere. Later, when the fluid appeared in the left pleural cavity, it seemed possible that the child might be the subject of general tuberculosis, and that the behavior of the effusion indicated tuberculous pleurisy; but the subsequent course of the case renders even this improbable, and we are still in the dark regarding the nature of this case of anasarca.

No conclusions are necessary to close what has been said, further than to state that it has been our object merely to impress the importance of careful and more extended study of the forms of edema as

observed in children, and to illustrate those forms by the citation of cases which have recently occurred in our experience.

CLINICAL MEMORANDA.

A SUCCESSFUL OPERATION FOR INTESTINAL OBSTRUCTION IN AN INFANT SIXTY-FOUR HOURS OLD.¹

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FOR the details of the family history, and for the personal history of the patient during the sixty hours before entering the hospital, I am indebted to the physician in charge, Dr. MacArthur of Littleton, Col., to whose early diagnosis and close attention the successful issue of the case is in very great measure due.

The mother is twenty-four years of age. She was married in 1893 and has had three children. The first was born on July 4, 1894, and died three weeks later, presumably from septic absorption from a superficial abscess. The second was born in November, 1895, and lived only three days, dying with symptoms similar to those manifested in this case, a *post-mortem* examination proving the cause to be intestinal obstruction. From a description given by the father of the condition at the time of this operation, I infer that the obstruction was probably due to a constriction with a Meckel's diverticulum.

The third child, a male, whose case I am about to report, was born at 8 A.M. on Friday, May 21, 1897. At birth it seemed strong, healthy and well-developed. The parents were of course very anxious and apprehensive, and every symptom was closely watched. It was found that during Friday there was no passage from the bowels, although the parts seemed perfectly normal. At nine o'clock that evening, Dr. MacArthur irrigated the bowel with warm water and obtained about a dram of white mucus. Early on Saturday morning the irrigation was repeated, and the rectum examined by means of the little finger. At about 9 A.M. the administration of castor-oil in small doses was begun, and this was continued at intervals throughout the day until the evening, when a teaspoonful was given at one dose.

About two hours after its birth the child vomited a quantity of greenish water, but with this exception all through Friday and Saturday there was no vomiting. Its temperature remained about 99° F., in the rectum, and it appeared to be doing well in every way. Early Saturday evening, immediately after nursing, it vomited undigested milk. At about 9 P.M. a No. 8 soft rubber catheter was passed high up into the rectum and about two and one-half ounces of warm water and glycerin were injected. The catheter passed quite easily, and when the fluid returned hard white shreds of mucus were brought away. At midnight two ounces of olive oil were given in the same way. The child's abdomen was now a little

distended but it nursed heartily, passed its urine, and did not vomit.

On Sunday, at 9 A.M., the high injections were again tried and two mucus shreds about three inches long came away. About 11 A.M. for the first time the child vomited a quantity of dark-brown fluid which had a slightly fecal odor. The vomiting was repeated at 3 P.M., when a large quantity was ejected, and again a smaller quantity at 8 P.M. During the afternoon the oil injections were repeated about every two hours. The friends think that gas may have been passed on Saturday. The injections on Sunday caused the child to strain with great violence.

About 8 P.M. on Sunday I found Dr. MacArthur waiting to consult me at my office. He was clear and emphatic in his conclusions that the case was one of absolute obstruction, and said that the parents realized the hopelessness of the condition and would consent to anything that promised a possibility of saving the child. He then started for Littleton, and returned before 11 P.M. to St. Luke's Hospital with the father and infant, having driven the eleven miles in an open carriage.

The operating-room at the hospital had been heated and the temperature was maintained at 90° F. The baby was then sleeping quietly. There was some distension, but no great amount of tympanites, the heart was beating 145 times to the minute and the symptoms seemed in no way urgent. Rectal injections, given in different ways, were tried, but with negative results, the water returning without stain. As there seemed to be no possibility of relief, and as delay would destroy the only chance of surgical interference proving successful, it was decided to operate immediately, and this was done between 12 and 1 A.M. on Monday, the child at that time being between sixty-four and sixty-five hours old.

In the operation I was assisted by Dr. MacArthur, while Dr. Elder, the anesthetizer of the hospital, administered the chloroform.

As no routine technic which would apply in the case of an adult could be followed in so young an infant, I was compelled to adopt such measures as seemed in my judgment best suited to the occasion. The abdomen was first carefully washed with soap and water, no stiff brush or hard rubbing being employed. The skin was then sponged off with one-to-sixty carbolic-acid solution, and the cord was trimmed down with scissors as closely as seemed safe and the surface of the stump carefully touched with a one-to-twenty solution of the same acid. These were the only disinfectants used in any way during the operation.

An incision was then made in the median line, carefully circling the umbilicus, and was extended as far as possible in both directions, the entire opening when completed being less than four inches in length. As soon as the peritoneum was penetrated, quite a large amount of fluid gushed out, showing that the cavity was fairly full. Several loops of gut immediately presented, which proved to be the upper small intestine. These were greatly distended, appearing to be more than one and one-half inches in diameter resembling adult intestines. They were immediately removed from the cavity and the small

¹ Read before the Colorado State Medical Society, June 16, 1897.

intestine followed down. The whole abdominal contents were very dark, the circulation seeming to be almost stagnant. The upper third of the small intestine was distended, and on following the gut downward it was found that it looped suddenly backward and all distension ceased, not in a marked line, as is usually the case in a distended intestine in the adult, but by gradual diminution. At about the middle the small intestine was closely bound to the posterior portion of the cavity by a transverse band. This band passed directly across the intestine, but was not adherent to it, although quite tightly drawn. I easily passed my fingers under it, when I found that I could flatten it out into a broad strip, the vessels and marked fibers contained in it running transversely across the bowel. In structure it appeared like the omental bands commonly seen leading into hernial sacs and to old adhesions. I quickly loosened it with my fingers, and, dividing it into two parts, tied it with catgut ligatures on each side and cut away the central portion. I did not stop to examine its attachments at each side, but they appeared to be deep. At this time I expected to have an opportunity to thoroughly dissect them out at a subsequent examination in the course of a few hours, but lessened the chance of being able to do so by losing no time in examining them then. Below this band the small intestine was contracted to about the size of a little finger and seemed to contain semisolid material. I removed all of the intestine from the cavity and found no obstruction below this. The attachment of the mesentery appeared quite normal. Even the cecum with the appendix attached came easily from the abdominal cavity. Considerable oozing took place from the engorged vessels and it was necessary to take up some blood with sponges moistened with hot salt solution. I did not flush or irrigate.

Without further delay the intestines were all returned, the abdomen stitched closely with silkworm-gut sutures, and a plain sterilized dressing applied. A gauze roller bandage was then put on with more than moderate tightness, so as to support the abdominal walls, and the child was wrapped in hot, dry blankets and artificial heat applied in many ways. He was under the influence of the anesthetic for thirty-five minutes.

Soon after stopping the chloroform, a very large amount of substance, which to all appearances and smell was ordinary myconium, such as would be passed by a normal child immediately after birth, was vomited. At 2 A.M. the child was removed to a room artificially heated to as high a degree as possible. Before the operation one-tenth of a grain of spartein was given hypodermically, and was repeated once during the anesthesia, and at this time one-sixteenth of a grain was given, also hypodermically, and this was repeated at intervals of about two hours. At 3 A.M. the child again vomited dark matter, and this occurred half-hourly until 7 A.M. At 4 A.M. urine was passed, and at 8 A.M. the first small bowel movement occurred, consisting of dark mucus-looking material. At 6 A.M. I began giving small frequently repeated quantities of hot water by the mouth, and at 10 A.M. injections of salt solution into the rectum. At 11 A.M. half a dram of malted milk by the mouth was first given,

and occasionally repeated until the mother arrived. The vomiting ceased at 7 A.M. and was not repeated until 2.40 P.M. Artificial heat to the body and in the room was kept up, but the child's temperature in the rectum continued at about 103° F. and the heart-beat at about 160. In the evening, small bowel movements were frequent, having rapidly become pure myconium, and at about 9 P.M. a large quantity was passed at one time. From this time on the discharges were frequent and profuse, the child crying occasionally but resting a great part of the time, and generally doing well.

The hypodermic injections of spartein were reduced to one-twenty-fourth of a grain toward Monday evening and a few drops of aromatic spirits of ammonia were given internally at intervals. The malted-milk feeding was gradually increased in frequency and quantity, and the injections of salt solution used whenever it seemed necessary. On Monday afternoon it was discovered that the dressings were becoming thoroughly saturated, and on removing them at 1.30 P.M. clear blood was found oozing from the wound throughout its entire length. It was impracticable to directly check this, as it was so general, so a narrow strip of iodoform gauze was laid along the wound, the sterilized dressing applied outside of it, and the bandage more tightly applied. The dressings became stained again, but not in sufficient quantity to necessitate changing before the next day, when the oozing was too slight to demand special attention. From this time on the dressings were changed daily. The stitches and margins of skin became red and angry, but soon improved and repaired perfectly.

The child rested well at broken intervals, during Monday night, sleeping altogether about three hours, but when disturbed would cry with considerable vigor. On Tuesday a few drops of Scotch whisky were given with the malted milk, the temperature gradually becoming lower. The patient slept a great part of the time and the bowels acted frequently. On Tuesday evening, the mother having arrived, the child nursed with vigor and appeared to enjoy it. It was now attempted to stop the administration of spartein hypodermically, but after missing two doses it had to be renewed. On this day the black stools gradually gave way to normal, healthy movements, but these becoming greenish on Wednesday morning a dram of castor-oil was administered, and acted satisfactorily. The child now appeared almost normal and was treated as a normal child in every way, except that the mild stimulation and the heating of the room was continued. On Thursday morning its temperature fell to 98½° F. and did not again rise. From this time on, improvement was constant, there being, however, a tendency to looseness of the bowels. The hypodermic injections were finally discontinued on Friday. Spartein was continued by the mouth during a few days longer. The stitches were all removed on Monday, the 31st, when the wound was perfectly healed and all redness and irritation had disappeared. On the fourteenth day the mother and child returned home. The latter has rapidly improved in every way, its weight increasing from six pounds on June 4th to nine and one-half pounds on June 16th.

This case has been one of great instruction and interest to me. It emphasizes markedly the fact that in an apparently hopeless case an operation which holds out any chance whatever should never be refused. It is never an easy or a pleasant duty to operate in the face of desperate odds, but it is a duty which should never be shirked. It tends also to show that perhaps young infants bear surgical operations much better than has been supposed. In this instance there seemed to be no shock, and no exhaustion followed. Indeed, when a week old the infant seemed to be in average health for a child of that age.

There is little to be said about the operation itself. As little as could be done, was done, and in as direct and simple a way as possible, the conservation of all energy and the avoidance of the danger of toxic absorption from the use of so-called antiseptics being especially aimed at. The great danger seemed to lie in the presence of the necrotic tissue at the cord attachment, but no infection occurred.

A matter of great difficulty, and in which there was very little to direct one's judgment, was the after-treatment. Especially, I had never before attempted to systematically stimulate an infant by hypodermic injections, but no unfavorable symptom or result followed.

A CASE OF TUBERCULOSIS INVOLVING THE HIP-JOINT, LUNGS, TESTICLES, INGUINAL GLANDS, AND ONE OR MORE OF THE VERTEBRÆ.¹

By HERBERT MAXON KING, M.D.,
OF GRAND RAPIDS, MICH.;
PHYSICIAN TO BUTTERWORTH HOSPITAL.

THE patient presented himself at my office for examination, June 23, 1896. He was twenty-eight years of age, born in Sweden, had lived in this country ten years, was a furniture-carver by trade, was married, and the father of one healthy child. Both parents were living and in good health. During the summer of 1895 he suffered from what he thought was rheumatism, which in December of the same year caused such marked pain, referable to the left hip, that he entered the Chicago Swedish Home and Hospital. A diagnosis of hip-joint disease was made, and Dr. C. W. Johnson curetted the diseased bone and effected good drainage. Upon microscopic examination of the *débris* the disease was pronounced tuberculosis. While recovering from the operation "hemorrhage of the bowels" occurred, which complicated matters, and he was not discharged from the hospital until two months later.

The patient consulted me because of cough and expectoration, and pain in the left shoulder and in the lumbar region upon coughing. I found consolidation at the apex of the left lung. He expectorated about one ounce during twenty-four hours. The sputum was mucopurulent and contained bacilli tuberculosis. Urinalysis gave negative results. Maximum temperature in the afternoon from 100° F. to 101° F.; pulse from 100 to 120 per minute. The patient did well under treatment (yeast nucleinic acid, hypodermically, inhalations under pressure of medicated vapors, and the usual attention to

nutrition), and I sent him into the country, August 4th, much improved, the temperature and pulse being much lowered and expectoration much less. He returned September 1st, feeling better than when he went away, but a few days afterward the pain in the lumbar region, which had never entirely ceased, became very severe, compelling him to remain most of the day in bed. Several urinalyses at this time failed to demonstrate the presence of any kidney lesion. On September 15th, the patient called my attention to a swelling of the right testicle, which was attended with much pain, especially upon standing or walking. He was then placed in a recumbent position and ice packs applied, with the effect of reducing the pain both in the testicles and the back, but the former remained very sensitive to pressure and the swelling did not diminish. At the same time the right inguinal glands become indurated and enlarged, one of them to the size of a pigeon's egg.

While suspecting the true nature of the orchitis, I was unable to verify the diagnosis until October 18th, when by delicate palpation a point of suppuration became evident. This was explored by means of a sterile needle and a drop of pus withdrawn, examination of which revealed the presence of bacilli tuberculosis. The diagnosis thus placed beyond doubt, removal of all of the involved tissues, as far as possible, was unquestionably indicated.

The patient was admitted to the surgical ward of Butterworth Hospital, and on October 20th Dr. Hugo Lupinski enucleated the right testicle (which was the size of a goose egg) and removed the involved superficial structures well into the healthy tissue. An effort was also made to enucleate the enlarged inguinal glands (which had now softened) without rupture, but, in handling, the sac of one was broken, and the pus escaped into the wound. The spermatic cord was tied off with silkworm gut as high up as possible, and in what appeared to be healthy tissue. The wound was not irrigated and the cavity made by the removal of the lymphatics was packed with gauze. The wound healed by first intention except where packed with gauze, and this soon filled with healthy granulations which closed the wound. Convalescence from the operation was uneventful. Upon cross section the testicle was found to be thickly studded with miliary tubercles, in many instances partially broken down and cheesy, there being two foci of suppuration, from one of which I had obtained the pus by which the diagnosis was verified.

Microtome section through the more solid portions of the gland, where the young miliary tubercles were so thickly studded, very prettily demonstrated the tuberculous process in its early stages (giant cells, etc.), and when treated for demonstration of the bacilli tuberculosis the latter also were found. After the patient was able to walk about he experienced a return of pain in the back, and this increasing, Dr. Lupinski discovered disease in the second and third lumbar vertebræ. Early in December the spine was fixed and supported in a cast, which gave marked relief. Pus finally found exit by two fistulæ on the left side, one in the inguinal line and

¹ Read before the Michigan State Medical Society, May 14, 1897.

the other about three inches below Poupart's ligament. When it became necessary to evacuate the pus this was effected by aspiration, and an emulsion of iodoform injected afterward. One fistula has ceased to discharge and has closed; the other is practically dry.

Seeing this case as late in its history as I did, I can only theorize as to the location of the primary focus of infection; natural inference would, I think, place it in the apex of the left lung, from whence radiated the subsequent deposits. My purpose in reporting it is: (1) that of demonstrating to what degree it is possible for some patients to become, in a sense, immune to the seriously injurious effects of the infection of tuberculosis, especially when it is a simple and not a multiple infection, even though it be carried to the point of saturation, so to speak, and (2) that of making a plea for perseverance in treatment, *medical* as well as surgical, in all cases of tuberculosis, and not to relegate a patient to the list of incurables as soon as a diagnosis is made.

MEDICAL PROGRESS.

An Advocate of Blood-letting.—HOFF (*Jour. Amer. Med. Assn.*, August 28, 1897) reports twenty-six cases in which after other remedies proved unsuccessful, venesection restored the patients to life. The list includes puerperal fever, eclampsia, paralysis from congestion of the brain, brain fever, meningitis, and cerebrospinal meningitis, pneumonitis in its first stages, congestion of the lungs, liver, and abdominal viscera, peritonitis, croup, tonsillitis, hemorrhage of the lungs, and incipient phthisis. "Repeated bleedings," says the writer, "will do more to cure consumption in its early stages than any other single agent, especially when used in conjunction with an open-air life, and in a dry and medium high atmosphere." Hoff would have every medical student instructed in the art of venesection, so as to be ready to apply this much-neglected therapeutic measure in cases of acute congestion of the internal organs.

Mushroom Poisoning.—CAGLIERI (*Medical Record*, August 28, 1897) reports that a family of six persons partook sparingly of poisonous mushrooms supposed to be the *Agaricus muscaria*. Three children, all boys, aged five, eight, and ten years, respectively, ate one-sixth to one-half of a mushroom for supper. The following morning they appeared somewhat sluggish, vomited after the administration of castor-oil, and suffered from mild diarrhea with little or no pain. They died after periods of coma of varying length in 29, 40 and 80 hours after the ingestion of the mushroom. A little girl, aged four years, and her mother, each ate about one-sixth of a mushroom, and had no symptoms, except slight vomiting. The father, who ate nearly two mushrooms, presented gastro-intestinal symptoms in a marked degree, and was stupid for two days, with a moist skin, small, rapid and regular pulse, and quick, shallow breathing.

These patients, with the exception of the first boy, who died, and the little girl, were given one-fiftieth of a grain of

sulphate of atropin every two hours. Strychnin was also administered. The pulse and respiration were improved by this treatment, but the coma was not changed. Caglieri explains the failure of the atropin to restore the patients, by the fact that it was administered thirty-six hours after the mushrooms were eaten. He regards it, nevertheless, as the best antidote for muscarin poisoning, but in another case he would give it in smaller doses, at shorter intervals.

The Yellow Fever Bacillus of Sanarelli and of Havelburg.—In the Public Health Reports, Washington, July 30, 1897, GEDDINGS calls attention to the fact that Sanarelli and Havelburg, working independently, and in places remote from each other, have each claimed to have discovered the specific microbe of yellow fever. Both agree that this is a bacillus, but the two germs described are in no wise similar. There is every reason to suspect that Havelburg has simply "rediscovered" the coli bacillus, a fate which many well-known investigators have met. The bacillus of Sanarelli was not found in one-half of the cases he examined, and although it killed guinea-pigs when injected in sufficient quantities, the organs of these animals did not present appearances at all similar to those of yellow fever; so that the evidence that the bacillus he describes is the real cause of this disease, is far from conclusive.

A New Splint for Nasal Fractures.—In the *Jour. Amer. Med. Assn.*, July 17, 1897, HAWES describes an appliance for the treatment of nasal fractures which is simple, easily made and applied, and which permits inspection of the nose without removal of the apparatus. It consists of a piece of No. 15 spring brass wire of suitable length, bent first into the form of a rectangular letter U, the arms of which are about an inch apart, and long enough to extend from the center of the upper lip to the crown of the head or beyond that point. Opposite the supraorbital ridge a sharp angle is formed, in order to permit the splint to enter the orbital cavity just beneath the orbital ridge. This angle is a means of fixation of the splint against the supra-orbital ridge, and is one of the most essential features of the appliance. The lower end of the splint; *i.e.*, the transverse portion, is carried forward, away from the lip, for a distance of half an inch.

Suitable compresses placed between the splint and the side of the nose will correct deviations. If necessary, a silk suture may be passed through the septum of the nose and tied to the transverse portion of the splint. No other appliance for drawing down and holding firmly the point of the nose or its alæ has ever been devised. In certain cases the inventor adds to the external splint an intranasal wire, which should be less stiff than that used externally, and covered with a soft rubber tubing. The splint is held in position by a strip of rubber adhesive plaster passing over the forehead and around the back of the head like a hat-band.

Plague Attacks Europeans.—It is reported that the plague is increasing in the Bombay presidency, and that several Europeans at Poonah have been attacked by the disease.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, OCTOBER 2, 1897.

THE PRESENT-DAY METHOD OF TEACHING MEDICINE.

As the time is at hand when the medical college throws open its doors in cordial greeting to the incoming class, it may not be amiss to examine somewhat critically what is offered the ambitious student and sometime doctor, and perhaps to suggest certain lines along which the present system of medical instruction may be improved.

Argument is not necessary in order to enforce the statement that medical pedagogy lags far behind in the onward march of methods of instruction in general. The reason for this lack of progress is not difficult to find; it lies in the fact that medical teaching, in this country at least, has ever been a tail to the kite of practice. A community is indeed small that cannot furnish accommodations for the teacher's rostrum and student's bench, the faculty receiving no compensation except that accruing from the personal aggrandizement attaching to the title of "professor." To teach with all the nobleness the phrase implies lies far from the purpose and the comprehension of many who, perhaps unthinkingly, assume the obligation. This reprehensible condition

of affairs will undoubtedly continue until, as our institutions become older, the great centers of learning, with salaried teachers who remain in touch with the profession only through the medium of the clinic, will exemplify in their work the higher and better methods.

It has been said that the science or art of medicine is a difficult one to teach, the truth of which statement one is unable to admit when it is remembered that to its study is attached a novelty almost continuous, and novelty always engenders interest, which, again, is the cornerstone of successful teaching. Correct pedagogic methods are everywhere centering about this word "interest," and it can but be acknowledged that he is the most successful teacher who best succeeds in exciting and sustaining it in the pupil. It is the failure of so many instructors to reach the required standard of excellence which is bringing the lecture method of instruction into disrepute, and it is into this method, also, that the personal equation enters so largely as to make it inapplicable as a universal teaching system.

In seeking something better a long step backward has been taken. The possession of a great mass of uncorrelated and unassimilated facts should not be a part of the armamentarium of the able physician, and yet it seems as though we are educating the student to do tricks and make set speeches during an examination, lengthening the college course a year or two in order that more speeches may be learned, only to be forgotten when they are no longer necessary for examination purposes. It would be absurd to think that such is the object of a longer course, but, nevertheless, it too often remains as a net result. Facts as facts have no place in education, but when they are properly correlated with others the opposite is true, and to be assimilated they must find a natural resting-place in the mind, in other words must fit into something which is already there. Possessing a keen and sustained interest and a goodly store of well-digested facts the next and final step, the deduction of principles, or formulation of correct action, becomes comparatively easy.

In what way may these great principles of teaching be put in practice? In the first place, interest may be sustained by making the entire medical course a perpetual clinic, for with an actual case as a text attention will never flag. About the positive

example may be grouped all the branches of medicine, from pathology to therapeutics. Facts should be taught, metaphorically speaking, by means of blocks, for one never grows so old that one does not best learn in this way. For example, the anatomy lecture-room is the dullest, most sleepy of places, while, on the other hand, that which it correlates, the dissecting-room, is always lively, always fascinating. Why? Because in the latter case, though the subject remains the same, the student is learning with blocks; he constructs the human body by taking it apart, and the lesson remains with him always, for although he may forget its terminology he never does its substance. The old scheme of preceptorship owed much that was good in it to such a system.

The clinic should always be a recitation-room, for it is here that the student should deduce those principles and confirm those facts which, later, are to be the mainspring of correct action. With the popularizing of the newer, but really older, system we may sometime realize the final examination which instead of being a mere test of memory will be a test of qualitative thinking, thus determining the quality of the man who, after all, must earn his living as a practitioner of medicine, surgery, and midwifery.

THE MOSQUITO AS AN ETIOLOGIST.

ALL joking aside, the question whether a mosquito can carry contagion, is an important one; grave enough to have attracted the attention of serious investigation. The latest testimony along this line seems to be against the insect. It is given by Ross in the *Indian Medical Record*, May 1 and 15, 1897. A mosquito bite, like any other wound, may be the starting-point of infection; and the object of Ross' investigation was not to establish this fact, but to learn by experiment whether or not malaria may be transmitted by means of mosquitoes.

It is conceivable that this transmission might be brought about in a variety of ways: by the ingestion of water in which they have laid their eggs, or which contain their *débris*; or by the inhalation of dust from the dried pools in which they have lived, or by their bite, or by the feces, which the insect leaves upon the skin, getting into the mouth from fingers which have scratched the irritated surfaces.

In the series of experiments conducted by Ross, no results followed the bites of insects previously fed

upon malarial subjects, although in one instance no less than thirty-six insects were turned loose upon one man whose history showed him to be likely to contract malaria on slight exposure. The mosquitoes were kept for various lengths of time before they were used, in order to give the malarial parasites time to reach the proper stage of development. It is possible that the species of mosquitoes employed were not the varieties which are capable of carrying malaria, as the species of this insect are many, and it is at least supposable that only one of them, or a limited number of them afford suitable conditions for the growth of the parasite.

The experiments with water in which mosquitoes had lived, and which contained their *débris*, including the spores of the gregarian (*pseudonavicellæ* or *psorosperms*), were more successful. In three out of twenty-two experiments, the ingestion of such water was followed by a distinct though slight attack of malarial fever; while in two other instances, there was a slight reaction which may or may not have been malarial in its nature. Leaving these indefinite cases out of consideration altogether, there still remain three positive results in twenty-two cases, and Ross estimates that although the natives in his district are subject to frequently recurring attacks of malarial fever, a liberal average would allow every native one attack each year, and that gives one case in every seventeen subjects in a period of three-weeks' duration. It may be urged that these cases are so few that they may still have been a coincidence; but this is an interesting line of experimentation, and the result is sufficiently striking to warrant further investigation.

HOW EVERY TOWN MAY POSSESS A GENERAL MEDICAL LIBRARY.

A SUGGESTION under this title is made by one of our correspondents which is worthy the careful consideration of every member of the profession residing in a town not yet possessing a public medical library. There are certain standard works which every practising physician must feel are indispensable to his daily work, and which he must have at hand for constant consultation. At the same time the fact must be recognized that few physicians are able to own all the books which at times they feel the necessity of consulting. To provide for such

contingencies, the suggestion of our correspondent seems practicable and worthy of prompt and general adoption.

In connection with the subject of books, we are apt to recall the familiar statement of Emerson: "I visit occasionally the Cambridge library, and I can seldom go there without renewing the conviction that the best of it all is already within the four walls of my study at home. The crowds and centuries of books are only commentary and elucidation, echoes and weakeners of these few great voices of Time." This is true in the realm of letters, but does not suffice in the department of medicine. Medical science is advancing so rapidly at the present time that the latest and best book of the highest authority becomes antiquated in many of its details and demands a revised edition almost before the first has been exhausted. Moreover, no single authority is able to present all of the facts and experiences of the different observers from which his conclusions are drawn. Every practitioner who is at the same time a student in his special work desires very often to go behind the conclusions even of the best authority and investigate the facts upon which his deductions are based. The doctor, therefore, is called upon to buy many books, and his desires in this direction frequently outrun his ability to satisfy them. By adopting the suggestion of our correspondent, especially when consultation is held as to how the investment in books from year to year shall be made, all of the latest and best authorities may be brought within the reach of the humblest practitioner.

ECHOES AND NEWS.

Dr. Nammack Appointed Visiting Physician to Bellevue Hospital.—Dr. Charles E. Nammack has been appointed visiting physician to the Non-collegiate Division of Bellevue Hospital, New York.

Dr. Joseph Collins Receives a Prize.—The Alvarenga Prize of the College of Physicians of Philadelphia, for 1897, has been awarded to Dr. Joseph Collins of New York, for an essay on Aphasia.

Alumni Association of St. Mark's Hospital.—The graduates of St. Mark's Hospital, New York, have formed an Alumni Association. Meetings will be held monthly at the hospital. President, Leon F. Garrigues, M.D.; secretary, Martin J. Schur, M.D.; treasurer, Casper Stock, M.D.

The University of California Rejects the Petition of the Hahnemann Hospital College.—At the last meeting of the

Regents of the University of California, the petition of the Hahnemann Hospital College requesting admission to the University was rejected. Fourteen members voted against and four in favor of such affiliation.

Indian Plague in Caucasasia.—A despatch to the *Daily News* (London) from Odessa says it is reported that there has been an outbreak of the Indian plague in the northern Caucasus. The officials refuse to give any information concerning the invasion, but it is known that a sanitary commission has left Tiflis to investigate.

Deadly Well Water.—Water from an abandoned well has given rise to several cases of typhoid fever near Rye Beach, N. Y. A party consisting of half a dozen persons went into camp near that place and drank water from an old abandoned well. The whole party immediately became ill, and two of the members have since died.

Diphtheria in Woonsocket, R. I.—Five deaths from diphtheria have occurred lately in Woonsocket, R. I. Since July 1st, there have been fourteen deaths from the disease, and it is estimated that over a hundred cases have existed in the city. The health officers and the board of city physicians are doing all in their power toward stamping out the epidemic.

Strange Equine Malady in Maryland.—Dr. A. W. Clements, State Veterinarian, reports the existence of an alarming epidemic among horses on the Eastern Shore of Maryland. More than one thousand have died of the disease, which is supposed to be caused by eating some poisonous vegetable matter. It is feared that the epidemic will become general throughout the State.

Prize Awarded to Dunant.—Moscow, in honor of the Medical Congress just held here, gave \$1000 for a prize to be awarded to some person who has done eminent service to medical science during this generation. On Professor Virchow's motion, the prize was given by the Congress to Henri Dunant, founder of the Red Cross Society who is living in great poverty in Switzerland.

Occupation of Cats as Mice-Catchers Gone.—Cats are to be dropped from the German military establishment; they have now an allowance of \$4.50 a year each for training, medical care, food, and badges. They are employed to protect the depots of military stores from mice. Professor Löffler, however, having discovered a typhus bacillus fatal to mice, this will be substituted for the cats.

Paris Hospitals.—It is said that several of the Paris hospitals which are built of wood and in a wretched condition are to be demolished and structures of stone and brick erected in their stead. Among these are the Pitié Hospital, built during the reign of Louis XIII., the Broussais Hospital, built in the course of six weeks in 1883, and the Aubervilliers Hospital, which is reserved for contagious diseases.

Success of the Recreation-Piers.—At a recent meeting of the New York Dock Board, a report was read stating that during the eighty-two days in which the recreation-pier at the foot of East Third street has been in use over 325,000

persons have availed themselves of it. The new pier at the foot of East Twenty-fourth street, which cost \$150,000, and was dedicated September 25th, will be enclosed in glass during the winter, and arrangements have been made to give concerts and popular lectures there.

Health Board War Ended.—In a decision handed down by Justice Barnard of the Supreme Court of New York, it is declared that the Board of Health of Northfield, Staten Island, was illegally constituted, and that the removal of Health-Officer Woods was illegal. Last spring the village trustees found fault with the Health Board, which consisted of five members, and increased the number to seven. As no provision was made in the charter for such an increase, Justice Barnard decided that the trustees had no power to make it.

Insurance Against Twins and Triplets.—*Apropos* of a new form of insurance referred to in the last issue of THE MEDICAL NEWS providing against the accident of twins or triplets, the so-called enterprising insurance man would doubtless be enabled to follow his calling in England, as a correspondent writes that he is cognizant of the existence of such a society in London. A lady of prominence in London social life took out a policy for £500 last year, which was paid without question by the company nine months later when she was delivered of twins.

Value of Pure Milk.—The great value of Pasteurized milk in reducing the number of deaths among infants from diarrheal diseases, is shown in a letter sent recently by the Brooklyn Board of Health to Nathan Straus, who supplies it to the poor at a nominal price. The death-rate of children under two years of age decreased from 137 in 1895, when the milk was not used, to 119 in 1896, when Mr. Straus introduced it, and 101 this year. These figures, based on an estimated population of 100,000, cover thirty-eight corresponding weeks in each year at a time when the disease is most prevalent.

A Case of Prolonged Unconsciousness.—Much attention has been given in England to a peculiar case, known as the "Dover Cliff Mystery." On August 5th, a young girl, aged seventeen, was found unconscious and bruised on the beach near St. Margaret's at the foot of a cliff 200 feet high, and was removed to the Dover Hospital. The character of her injuries (a severe bruise on the right side of the forehead and slighter contusions on the occiput and left ankle) makes it seem most improbable that she had fallen over the cliff, as was at first supposed, and it has been suggested that she was sunstruck while walking on the beach and received the bruises in falling to the ground. The possibility of the case being one of typhoid fever arises when it is remembered that long periods of unconsciousness, lasting more than four weeks, have been known to occur in this disease. The temperature curve, also, is not unlike that of typhoid. The principal treatment has been the use of the cold pack whenever the temperature rose above 102° F. Bromid of ammonium and iodid of potassium were given internally, with a diet consisting of milk and beef-tea. The systematic use of the ice-pack

and indefatigable attention to nutrition have thus far preserved the girl's life, but she still lies unconscious.

Health Reports.—The following statistics concerning cholera and yellow fever have been received in the office of the United States Marine Hospital Service during the week ending September 25, 1897:

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Mobile, Ala.	September 18	11	..
" "	September 19	2	..
" "	September 20	1	..
" "	September 21	2	..
" "	September 22	4	..
" "	September 23	2	..
" "	September 24	3	3
Atlanta, Ga.	September 23	1	..
Cairo, Ill.	September 19	2	..
" "	September 20	2	..
Louisville, Ky.	September 23	1	1
New Orleans, La.	September 18	5	1
" "	September 19	6	2
" "	September 20	18	..
" "	September 21	9	..
" "	September 22	12	2
" "	September 23	9	3
" "	September 24	10	4
Barkley, Miss.	September 18	1	..
Biloxi, "	September 19	..	1
" "	September 20	1	1
" "	September 21	..	1
" "	September 22	5	1
" "	September 23	..	..
" "	September 23	..	..
Edwards, "	September 19	4	..
" "	September 20	2	..
" "	September 21	12	..
" "	September 22	13	2
" "	September 23	23	..
" "	September 24	29	..
Ocean Springs, "	September 18	2	3
" "	September 22	4	..
" "	September 23	6	..
" "	September 24	1	..
Scranton, "	September 19	1	..
" "	September 20	15	..
" "	September 22	4	..
" "	September 23	6	..
Beaumont, Texas.	September 22	1	..

Notes on the Yellow-Fever Epidemic in the South.—Two patients with yellow fever reached New York quarantine on September 22d on the steamer "Finance" from Colon. They were immediately transferred to Swinburne Island, and the other passengers and the crew of the steamer were sent to Hoffman Island, where they will be kept under observation.

The city council of New Orleans, at a special meeting held recently, placed \$25,000 at the disposal of the Board of Health with which to fight yellow fever. An additional \$25,000 is held in reserve to be used if the situation becomes serious enough to make this necessary. The members of the board, however, think there is no danger of the epidemic spreading.

The city authorities of Atlanta, Ga., have threatened with severe punishment anybody who spreads an inaccurate report that there is yellow fever in that city.

A death from yellow fever is reported in Beaumont,

Texas. A rigid quarantine has been established in the hope of checking the progress of the disease.

The Queen Regent has ordered that special surveillance be exercised at Spanish ports on all arrivals from the United States ports, in consequence of the outbreak of yellow fever in some of the Southern States.

At the request of the Pennsylvania Railroad, Health Inspector Benjamin of Jersey City furnishes health certificates to conductors of trains which are to pass through Alabama, as the laws of that State require that all conductors be examined and certified to before they leave the North.

Because the Board of Health of New Orleans made arrangements to use a school-house for a temporary fever hospital, a mob of excited individuals living in the neighborhood ordered the doctor and Sisters of Charity to leave the building and proceeded to set fire to it. Part of the building only was destroyed. As it stands in a park by itself, away from other buildings, it would seem that those living near were unnecessarily alarmed.

Dr. Lovell, son of Colonel Starr Lovell of Mississippi, died at New Orleans on September 22d from yellow fever. He contracted the disease while attending fever patients.

CORRESPONDENCE.

HOW EVERY TOWN MAY SECURE A MEDICAL LIBRARY.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: That a large, well-selected public medical library is an absolute necessity for any one who wishes to write upon or thoroughly study any subject connected with the art and science of medicine, no one will dispute. The experiences of ages and the results of innumerable investigations are crystallized in books. Every book is a great institution by itself. On this shelf is my physiological laboratory, on the other my biological institute; here my anatomical theater, there my lying-in-hospital. Whenever I wish, I can converse with Virchow, Da Costa, and Keen. I can at will make all the dead, from Galen to Charcot, arise and give me in turn some of their wisdom.

I do not presume I have said anything new, for every one of us is somewhat of a book-worm, yet the number of cities that possess a public medical library may be counted upon the fingers. True, some of our fortunate brethren-in-Esculapius can buy all the books they wish to read, but no individual can afford to get together all the books that he *might* at some time wish to consult. It is obvious, that the most practical and most economic way for each community is to own a public medical library, where the best works may be gathered together, and where one book supplies the wants of many, at a small cost to all concerned.

When I came to Denver, after having fattened upon the luxuries of the library of the College of Physicians of Philadelphia, I thought that in the wild and woolly West I should miss entirely this pleasure. I was, however, pleasantly disappointed in finding a wisely selected, thoroughly indexed and well-kept medical library.

Having had an occasion to make some extensive research, I found, to my regret, that the library was not sufficient for my purpose. It was natural that I should turn to my friends and acquaintances for assistance. I went from one physician to the other and inquired for the volumes I wished to consult. And, lo and behold, to my great joy I had to cry *eureka* a good many times a day; in fact, I found upon the shelves of the private libraries of my friends here and there a book which would make the mouth of the Surgeon-General water. Furthermore, I have convinced myself that the physicians themselves on account of lack of proper arrangement and the absence of an index or catalogue did not know what valuable books they owned. The larger the collection of books, the more difficult it was to ascertain what it contained, and the less available it was for reference.

I then conceived the idea of a Union Catalogue of Medical Books and Journals and on December 9, 1896, I read a paper before the Denver and Arapahoe Medical Society, entitled: "How the Library of the Colorado Medical Association Can Double the Number of its Volumes without Making Any New Purchase—A Suggestion." The title of the paper, which seemed to many to be of the "catchy" sort, brought to the meeting all the officers of the library, and also the accomplished librarian Mr. J. C. Dana, all of whom were eager to find out how to make something out of nothing.

My suggestion was a very simple one. A catalogue of the public medical library should be sent out to every physician residing in Denver with a circular letter requesting that he should at his leisure prepare a list of such of his books and journals as are not found in the public library; such list to be returned to the librarian. The librarian should prepare a card catalogue of such books and periodicals as the lists should furnish; such catalogue to be kept for reference. Each card should indicate in whose office each book may be found, and at what hours it would be accessible to readers. By adopting this plan I was sure that a thousand volumes of medical works which are not to be found in the public library could at once become available for use, and this, without expense or inconvenience to any one.

The writer of these lines had the satisfaction of hearing the consensus of opinion that the plan was both useful and feasible.

The work has been accomplished. The librarian has prepared a carefully indexed card catalogue by author, title, and subject of all the books and journals from the lists which I have furnished. The result has exceeded the most sanguine expectations. We have added to our library about two thousand titles, and more than six thousand volumes. The physicians without exception have heartily co-operated in the work, and cheerfully offered their books upon the altar of mutual helpfulness.

Of course, this plan may be carried out more efficiently in any city where there is a medical library. But in cities where there is no library by adopting this plan the foundation of such can be laid, provided the physicians will show a spirit of fraternity and co-operation. Even in small cities there are enough books scattered among

the practitioners to constitute a good reference library, if they were only supplemented with a good index. Experience has taught us that we cannot leave the work of making out the lists to the physicians themselves. The work must be accomplished by one or two individuals. He who has just graduated, or who has a superabundance of time on his hands should undertake this work of love. He will soon find that the work besides being profitable to the whole profession, which will be gratefully acknowledged, will at the same time be of great help to him in the future. He will acquire an acquaintance with the medical literature which he could not otherwise obtain. He will see all the prominent physicians at their best, for no matter how uncommunicable a man may be by nature you will find him talkative and genial when the subject concerns his favorite books.

I hope that this plan will be adopted wherever the profession is fairly organized and living together amicably. This practical and inexpensive plan will not only foster learning and facilitate research, but it will strengthen the moral ties which bind the members of the profession one to the other, and, eventually will serve as a nucleus of a future library.

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TWELFTH INTERNATIONAL MEDICAL CONGRESS.

[From our Special Correspondents.]

MOSCOW, August 23, 1897.

THE Section of Bacteriology and Hygiene met August 20, 1897, in the Historical Museum, the President, Dr. M. S. Boubouff of Moscow, occupying the Chair. The first day was devoted to reports and communications in regard to water supply.

Professor T. Hueppe of Prague in the discussion of this subject said that in the examination of water it is always necessary to consider the geologic conditions surrounding the source. He emphasized the point that the bacteriologic examination may be negative and yet the water be unfit for use, in consequence of which such an examination is not alone sufficient, but must be supplemented by careful chemic and geologic analysis as well. Hueppe approved in general of the filtration of water to be used for drinking purposes, and of the method of sand-filtration in particular, but stated that such systems should be constantly under the supervision of a competent bacteriologist who should make daily examinations in order that the filter may be cleansed at the proper time. He did not think that a bacteriologic test would always indicate whether or not the water is infected—a point which was disputed by some of the members present.

Professor Victor C. Vaughan of the University of Michigan, U. S. A., read an able paper, entitled the "Bacteriologic Examination of Drinking-Water." Professor Vaughan has been engaged in such examinations for the past nine years, particularly specimens of water supposed to have caused typhoid fever. During the past four years he has examined 359 samples, 83 of which were suspected of having caused typhoid; 157 specimens

were regarded with suspicion, and 119 had been examined in view of selection of a proper water supply. The examinations had consisted of the ordinary plate-tests, counting of germs per cubic centimeter, isolation of the different micro-organisms, and the inoculation of animals with mixed and pure cultures of the germs found in each of the specimens examined. Of the 359 samples, eighty contained germs which proved to be pathogenic for different animals, and fifty-six of these were specimens of water from the class supposed to have caused typhoid fever. He divided the pathogenic germs into two classes, *viz.*: (1) those of the colon group, and (2) those resembling the typhoid bacillus. Vaughan did not find either the typical germ of typhoid, nor did he succeed in isolating a pathogenic spirillum. Waters containing germs belonging to the colon group he did not condemn, but those containing germs resembling the typhoid bacillus were all condemned; and the fact that every epidemic of typhoid fever ceased as soon as the use of such water was discontinued proved that such examinations are of great value.

In the discussion which followed Professor Dense of Hamburg pointed out the important results which had accrued to the city of Hamburg from the use of filtered water, and further, that cholera and typhoid fever ceased upon the introduction of sand-filtration.

The next day, August 21, 1897, an interesting paper was read by Professor Victor C. Vaughan, entitled "The Prevention of Tuberculosis." The following is a summary of the author's conclusions: (1) All milkmen should be provided with a license from the municipality; such a license not being granted until the cattle have been inspected by a competent veterinarian who should apply the tuberculin test in every instance, and any animal found suffering from tuberculosis should be immediately destroyed. (2) Cattle killed for food should also be subject to skilled inspection. (3) The disinfection of sputum from consumptive individuals is absolutely necessary, and such persons should not be allowed to expectorate in the streets or public vehicles. (4) Houses and rooms which have been inhabited by consumptives should be disinfected. (5) The government should construct, equip, and maintain, hospitals for paupers suffering from tuberculosis; such hospitals should be divided into two classes—one for incurables and the other for those who may recover. (6) Tuberculosis in its early stage is a comparatively curable disease, therefore, persons yet in this stage should be examined once or twice a year by a physician, and the government should furnish physicians to make such examinations for the poor.

Dr. Stchepotier of Constantinople discoursed upon the subject of "Sanatoria for Consumptive Poor for the Protection of Public Health." His conclusions were: (1) The true treatment of tuberculosis, hygienic and dietetic, cannot be applied except in a special hospital situated at a sufficient distance from any urban district. (2) Pure air and sunlight are the most potent enemies of this disease, therefore, such sanatoria should be located where the patients may spend the greatest length of time in the open air. (3) Consumption being principally a disease of the poor, it is desirable that governments, municipalities,

philanthropic associations, medical and public-health societies, should assist in the foundation of institutions for the care of consumptives of the poorer classes. (4) Every large urban population should provide such an institution located outside the city where conditions are as favorable as possible for the cure of tuberculosis.

"The Periodicity of the Occurrence of Epidemics of Diphtheria in the Rural Portions of Russia" was the title of a paper by Dr. A. K. Tschepourhovsky of Moscow. He stated that such epidemics occur about every ten years with a certain amount of regularity, the interval between epidemics depending upon various factors, among which the following are the most important: Age, individual susceptibility, rapidity of the spread of the disease, efficiency of the measures taken to arrest the epidemic or the absence of such measures. The fact that it is possible to know in advance the time when an epidemic will appear allows precautionary measures to be taken. The study of these epidemics, their periodicity and origin, is a subject worthy the attention of the health-officer and epidemiologist.

Professor Edward Nocard of Paris spoke upon "Serum Therapeutics in Tetanus." He considered the tetanus antitoxic serum both as a prophylactic and curative agent. His conclusions were as follows: (1) When tetanus has once declared itself, the antitoxic serum has no action; it is powerless to arrest the fatal termination of the disease, and this without reference to dosage or strength of serum; those alone are cured who would have recovered in any case. (2) The serum-treatment is, however, useful even in actual tetanus, for although the number of cures is not increased, yet those who do recover do so more quickly. (3) The antitoxic serum, even in weak dosage, if employed at the moment of the reception of the suspicious injury, or even some time afterward, will prevent the onset of the disease. (4) The dose must be both larger and stronger according to the length of time intervening between the reception of the wound and the employment of the serum; intravenous injections are more potent than hypodermic; the attack of tetanus is not always warded off, but, as a rule, if the disease occurs it is of a mild type, and the animal recovers, even though injected with a dose of toxin invariably fatal to a control animal.

Dr. A. Mennella of Rome read a paper upon "Cycling," in which he endeavored to prove that cycling had lost its true aim, and that the exaggerated manner in which it is now employed has changed the advantages which it possesses into real and sometimes dangerous disadvantages. A medical man should not consent to wheeling as an exercise for anyone of whose health he is not sure, as it is dangerous for persons predisposed to pulmonary, heart, or genito-urinary disease. Cycling is injurious to health from three causes—the contraction of the muscular system, chills following perspiration, and the stooping posture, which renders respiratory movements defective.

The labors of the Section were terminated by a visit to the Institute of Hygiene of Moscow and the city abattoirs, which latter are situated far enough from the city to obviate any sanitary nuisance.

MOSCOW, August 28, 1897.

SIR WM. MACCORMAC, who presided at the last general session of the Congress by invitation of the President, Professor Sklifosovsky, closed the session and at the same time the Congress, not with "*adieu*" but "*au revoir*," at Paris in 1900. Just before the end of the meeting there was a very touching scene. Professor Virchow, as the representative of the medical men assembled from all over the world, thanked the Committee of Arrangements, and especially Professor Sklifosovsky, for the perfection of entertainment the members had enjoyed, for the cordiality of their reception, and for the hospitality they had found everywhere in Russia, and especially here in Moscow. The words of grateful appreciation were evidently heartfelt, and above all they echoed the sentiments of the members of the Congress. Virchow's address was followed by prolonged and enthusiastic applause. Feeling that too many of the thanks were coming to him, Professor Sklifosovsky turned to the audience to explain that the greater part of whatever success the Congress had met with was due to his collaborators on the committee, but words failed him for the expression of his feelings in a foreign tongue, and with tears in his eyes and broken voice he proceeded for a few sentences in Russian, of which the untutored stranger's ear could catch only the word "*bratj*," "*brothers*," and then broke down completely. It was because Russians have worked together shoulder to shoulder as brothers that the successful result has been attained. A wave of sympathetic emotion which could be felt passed over the audience and for a moment the east and west of Europe were united in more cordial feelings of brotherhood than ever before.

The last general assembly was at least as interesting as had been the preceding ones. The paper of Professor Loukianow of St. Petersburg on "The Inanition of the Cellular Nucleus," was the simple relation of a bit of ground-breaking work which may have far-reaching results. The morphology of the cell is much better known than its biology; in fact almost nothing is known of life processes within the cell except in so far as they affect its form. As to the nucleus, the obscurity is still deeper and practically nothing has been known regarding it up to this time. About a year ago the results of some work was published from Loukianow's own laboratory in the Institute of Experimental Medicine, in which some facts as to the effects of inanition on the cell-nucleus were deduced from its analogy with bacteria. It was found that bacteria lose during the first four to six days of inanition fifty-one per cent. of their substance, and then remain in a state of comparative equilibrium as regards weight for forty to eighty days. During this time cultures may be made, showing that life is still present. Nuclei have a good many analogies with bacteria in their life history, and so it was argued that nuclei, too, might lose one-half their substance and yet not undergo degeneration.

Some direct experiments to demonstrate this were undertaken and the results of these observations formed the basis of Loukianow's paper. In animals which had lost thirty-five per cent. of body weight from inanition, care-

ful micrometric measurements of the cells of the pancreas showed that while the cell itself had lost thirteen per cent. of its volume the nuclei had lost but three per cent. This seemed to demonstrate that the nucleus was independent biologically of the cell body. This autonomy of the nucleus would demand a composite structure, but beyond the varied granular appearance which different stains brings out, no structural arrangement was discoverable.

Further experimentation, however, brought out another fact in the biology of the nucleus. White mice were fed on a series of exclusive diets, some on lard alone, others on sugar, some on peptone, white of egg, and hay. When the animals of each series had lost about thirty per cent. of their body-weight, which required very different lengths of time for the various dietaries, the nuclei of their liver and pancreas-cells were examined. They were found to have reacted very differently according to the kind of food which had been given. In one series they had lost forty-four per cent. of their volume, or more than the bodies of the animals, and in another only twelve per cent. The nuclei would seem, then, to have a selective action in their nutrition. In these observations, however, as in the others, no differences of structure and no noteworthy modifications of the general appearance could be discovered.

Professor Leyden spoke of "The Therapy of Tuberculosis." Notwithstanding all that has been done and claimed for various special therapeutic measures in the treatment of tuberculosis, the conclusions, as expressed at the last International Congress of the Nineteenth Century, are that no specific treatment is known, and that only careful constitutional treatment under favorable climatic and hygienic conditions avail to arrest the progress of the disease. For Professor Leyden, sanatoria for tuberculous patients constitute the best means we have to increase the resistive vitality of the organism, to prevent the further progress of the disease, and eventually in many cases to lead to a cure of the condition if it has been taken in time.

The discussion of the subject at the sessions of the Medical Section of the Congress during the week had already showed that this is the impression generally prevalent in Europe as to the therapy of tuberculosis. Tuberculin, even in its latest form, has given no results that can be considered even encouraging, and not much hope seemed to be expressed in the ultimate successful serum-therapy of the disease. It is to be noted, however, that this is the opinion of practical therapists, not of bacteriologists, who in their section were of another mind.

Professor Lombroso of Turin, was welcomed with prolonged applause which showed how popular are the man and some of the ideas in psychopathology which he represents. His discourse was rather a popular exposition of the present position of what may be called "physiologic psychology" rather than a scientific exposition of its principles. He considers that the best guarantee we have at present that the new science is really and essentially a science is the opposition its development has awakened, for every new science has met with just this opposition at its inception. The idea of criminal anthro-

pology, however, is not to take the criminal out of the hands of the law, but to protect the irresponsible and even the seeming criminal in as far as he is irresponsible from the rigors of a code founded to too great an extent on the absolute accountability of all men for their acts and without sufficient consideration for, and appreciation of, the physical elements which modify that accountability. The science acquires additional interest from the fact that its investigations are leading us to a closer knowledge of the relations between genius and insanity and the far-reaching influence of heredity in mental conditions.

One of the great drawbacks to the development of the science of psychopathology has been the inability to find definite anatomic lesions as the basis of its symptomatic affections. The objection, however, holds for most of the nerve-affections and it is only the further progress of minute cerebral anatomy in which so much has been accomplished during the last few years that can give us the keys to the mystery of disturbed as well as normal brain functions. Lombroso thinks, however, that the adoption of precocious explanatory hypotheses will delay rather than further the progress of the science. The explanation of certain of the phenomena of memory, of sleep, of double consciousness, of hysteria, and of hypnotism on the theory of the contractility of the neurons, with making and breaking of nerve-circuits, he considers supported by too few observations to be tenable. It is an alluring bit of theory but nothing more, in the present state of our knowledge. Lombroso, seems, however, to admit more easily, a good many of the disputed observations with regard to hypnotic states and double consciousness which have of late years done so much to bring certain phases of the new physiologico-psychology into prominence. There was even a suggested explanation for certain telepathic influences—*actio mentalis in distans*—which smacked of mere wordiness, *vox et præterea nihil*, "for the polarization of certain cerebral molecular elements," as the condition underlying such influence, would sound as delightfully theoretic as the modern formula solution of psychic problems often is.

The conferring of the first prize of Moscow on M. Henri Dunant was a most graceful tribute to a man who has so well deserved of humanity, and comes at a most opportune moment, for it is generally understood that the founder of the Red Cross Society has been in needy circumstances for some time. The honor is enhanced by the fact that the prize is conferred on him at Professor Virchow's suggestion. The announcement of the selection of M. Dunant as the person on whom the first of the series of Moscow prizes was to be conferred was the signal for acclamations which showed how thoroughly the work he has instituted is appreciated by the medical world.

ST. PETERSBURG, September 3, 1897.

THE fêtes organized for the medical visitors to Moscow ended with the soirée of adieu, given by the doctors of St. Petersburg, at the Nobles' Club, on the evening of August 30th. Those of us who remained in the capital of all the Russias for a day or two longer found that Russian hospitality was not at an end just because the

regular program had been finished. Medical visitors to the hospitals, to the clinics, to the laboratories, even to the public museums, libraries, the palace, etc., were as warmly welcomed as during the three days when such visits formed part of the regular routine, and all this was done, though at the same time in St. Petersburg there was being held the International Congress of Geologists, to the members of which the special privileges of guests of the city were accorded, and who were most enthusiastic in their praise of their Russian hosts.

The medical institutions of St. Petersburg are well worth a visit, for their internal arrangements, as a rule, are regulated by the best principles of modern hospital hygiene and the requirements of modern surgery. They have not the advantage that is so striking to the visitors in Moscow of perfectly new buildings where every requirement was foreseen in the construction, but they have in every case obviated the inconveniences and disadvantages of the older buildings in a way to call forth the admiration of the visitor in every department. The attention to details in the management seems to be admirable. After the perfect way in which the General Medical Committee succeeded in handling the immense crowd that came to the Congress—a much larger number than attended previous congresses and almost unexpected—the visitor has had brought home to him the fact that Russian medical men are not lacking in administrative ability, and he is not surprised to find their hospitals admirably managed.

The medical institution of St. Petersburg, however, which perhaps is best worth a visit, is The Imperial Institute of Experimental Medicine. There is nothing elsewhere in Europe that is quite like it, for it contains departments for the study of both human and animal diseases (at least for rabies), and is also provided with a clinical department where patients are taken care of and given the Pasteur treatment. If the Pasteur Institute at Paris, and the Veterinary Institute at Alfort, were united, then France would have an institution such as the one at St. Petersburg. Situated on the shore of one of the islands in the Neva, on large and magnificent grounds presented by Prince Oldenburg, there is plenty of room for the many already existent departments and those in contemplation. With the largest branch of the Neva, the greater Nevsky, flowing close by, the Institute is admirably situated scenically and as regards its water supply. All the departments necessary for the study of experimental medicine are thoroughly equipped. Chemistry, physiology, physiologic chemistry, pathologic anatomy, bacteriology, and serum-therapy—each has its place. The animals intended for experimentation are well cared for, their kennels being planned with an eye to thorough cleanliness, and are light, airy, and roomy. The facilities for the transportation of animals in cars and on elevators are calculated to eliminate the unpleasant scenes sometimes connected with the moving of animals for experimental purposes. The precautions taken against the spread of such diseases as Indian plague and rinderpest during the course of experiments are most complete and include hot ovens with powerful draught in each, in sepa-

rate compartments of which all parts of affected animals are completely destroyed. The operation-, bathing-, and disinfection-rooms, for animal experimentation are as complete as the nicest details of antiseptic surgery require. The mechanical and scientific apparatus in use in the laboratories are of the latest and most perfect pattern. The whole institution has been planned and equipped for the carrying out of the very best and most advanced scientific work in all branches of experimental medicine.

No wonder that the journal of the Institute, which is published in Russian and French at times during the year when a sufficient amount of matter is at hand, should attract general attention in the scientific world, and should be one of the journals oftenest quoted in experimental medicine. No wonder, too, that the work of the directors of the various departments should be considered as of great scientific value and be carefully looked for by those who are sedulously watching the forefront of medical advance along various lines. All in all, the Western visitor to Russia has, I think, obtained very different ideas as to the medical situation in the East of Europe from those with which he came. To all of us the magnificent university clinics at Moscow came in the light of a surprise. No one unacquainted with the actual condition of affairs could have imagined for a moment that the finest set of hospital buildings in the world, covering acres of ground, almost all absolutely new, models of architectural beauty, was to be found a way off in the center of Russia; but the Western visitor came and was convinced. The idea that the effete East was no longer productive vanished before the persuasion that there were elements of stirring youthfulness, with outspoken promise of further development in all this that must be reckoned with in the evolution of science in the very near future. If the Westerner had heard during his trip through Germany and Austria some echoes of the contest between Germans and Slavs where the two races come in contact, as at Prague, it was only to think that the attempt to raise a Slavic people and Slavic tongue in the midst of Teutonic culture could only end in signal failure. But here everything bespoke the Slav, and there came the realization of the wonderful latent powers just ripe for development that exist in this illy understood people of Eastern Europe. The Slavs themselves claim that the future is theirs. Roman, Celtic, and Teutonic civilization, culture, and literature have had their apogee. The genius of the people has exhausted itself in the effort and now must make room for a new people whose development is yet to come. All of this of course sounds like the vainest boasting of over-enthusiastic patriotism to the stolid Westerner confident in his position at the head of the race, but it must have seemed just as improbable to the old Latins that they should be succeeded by Teuton and Gaul, and Hun and Goth, in the sovereignty of the world. The present generation will not see the rise of the new race, but if we are to judge of the future by what is to be seen in the present the evolution may be confidently committed, should the time ever come for it, to the Slavs of the East of Europe.

Another Eastern race attracted some attention at the

Congress when the delegate from the Japanese Government asked that in 1903 the Fourteenth Congress be held at Tokio, in Japan. The proposal was the source of not a little merriment, for even to the thousands of medical men who had traveled as far as Moscow to an international medical congress, it scarcely seemed serious. A talk with the Japanese representative showed, however, that the request was made in all seriousness, and that even details of the arrangements necessary had been thought out. It is considered highly probable, by those in a position to know, that the Japanese Government would charter a sufficient number of vessels on which at government expense all foreign members of the Congress would be transported free of charge to Tokio. As to arrangements in Japan itself ample guarantee is given that the reception would be a most cordial one, and that the guests of the nation would be given a chance to appreciate thoroughly Japanese hospitality.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

MEETING OF THE AMERICAN ELECTROTHERAPEUTIC ASSOCIATION IN HARRISBURG — PHILADELPHIA COUNTY MEDICAL SOCIETY — PATHOLOGICAL SOCIETY OF PHILADELPHIA—ADDITIONS TO THE FACULTY OF THE MEDICO-CHIRURGICAL COLLEGE—DR. CHARLES W. BURR—DR. WILLIAM G. SPILLER—DR. H. AUGUSTUS WILSON—VITAL STATISTICS FOR THE WEEK ENDING SEPTEMBER 25TH.

PHILADELPHIA, September 25, 1897.

THE seventh annual meeting of the American Electrotherapeutic Association was held in Harrisburg, at the Academy of Medicine, on September 21st, 22d, and 23d. A large attendance was evidenced, and many new and interesting electrotherapeutic instruments and appliances were shown. Papers were read by Drs. G. Betton Massey of Philadelphia, Robert Newman of New York, E. R. Corson and R. J. Nunn of Savannah, F. B. Bishop of Washington, Lucy Brown-Hall and Margaret A. Cleaves of Brooklyn, and by G. E. Bill, W. T. Bishop, and J. Z. Gerhard of Harrisburg. The important question of electric meters was thoroughly discussed on the first day of the meeting, and the application of an efficient instrument for the control of the current was held to be the only reliable agent guiding the scientific application of electricity in therapeutics. A reception by Governor Hastings was tendered the Association on the evening of the second day of the meeting.

At the last meeting of the Philadelphia County Medical Society, held on September 22d, Dr. Edward Martin read a valuable communication on the subject of "The Operative Treatment of Goiter." After having given careful consideration to therapeutic measures other than operative intervention in the treatment of this condition, and having shown the uses and limitations of such procedures as the use of thyroid extract, galvano-puncture, and the injection into the goitrous mass of iodine and iodoform emulsion, the speaker went on to describe the operative treatment which he had employed in the series of cases, seven in number, which formed the basis of his report. The operation was

essentially that recommended by Kocher, preference being given to a transverse incision over the growth, although in a tumor extending down into the chest, a larger angular incision was deemed necessary. The patients operated upon by Dr. Martin were exhibited before the Society at the close of the reading of his paper, and conclusively demonstrated the tenability of the speaker's argument in favor of this operative measure. In none of the cases was the scar unsightly, in but one had the operation been attended with noteworthy complication, and in all either complete cure or marked improvement in the nervous and other phenomena had resulted. Dr. John B. Roberts remarked upon the rarity of operations for goiter in this city, a fact emphasized by Dr. Martin, and deplored that the laity misapprehended the seriousness of the operation and magnified the danger attending it. He reported also a number of cases with results similar to those of Dr. Martin. Dr. Roland G. Curtin expressed the opinion that in Graves' disease the operation indicated in simple cystic goiter was uncalled for, and might even prove detrimental, and related a case in which, after the injection of ergotin, the goiter suppurated and disappeared. Dr. A. A. Eshner maintained that all forms of goiter, whether simple or exophthalmic, presented similar indications for operative interference, and thought that in the latter condition it was justifiable to remove the gland for therapeutic purposes. Dr. G. G. Davis also spoke in favor of the operative treatment of the disease, and discussed the mortality and the risks of such treatment. The President of the Society, Dr. James Tyson, in discussing the treatment of goiter from the standpoint of the physician, remarked that his personal experience in the medical treatment of the condition had not been encouraging.

At a stated meeting of the Pathological Society of Philadelphia, held on September 23d, Dr. David Riesman reported a case of carcinoma of the gall-bladder and liver, in which partial involvement of the stomach and pancreas was also present. During the discussion of this paper an interesting point was brought out concerning the value of albumin percentage of fluids withdrawn from the abdominal cavity for diagnostic purposes, and it was shown that in no single disease accompanied by a collection of fluid in the abdomen, was the richness of such fluid in albumin indicative of the nature of the lesion. Dr. Joseph McFarland read a paper on the coccidium oviforme, and demonstrated the gross pathology and the microscopic characteristics of this condition.

The faculty of the Medico-Chirurgical College has been augmented by the addition of four new professors, who will enter upon their duties with the opening of the winter term of this institution, on October 4th. The newly elected teachers are Dr. Charles E. de M. Sajous, whose election to the chair of laryngology was announced early in the summer, Dr. Louis Rodman, who has left the professorship of operative surgery in the Kentucky School of Medicine to accept the chair of surgery, Dr. John C. Heisler, professor of anatomy, and George S. Meeker, B.S., professor of chemistry.

A chair of neuropathology having been created at the Philadelphia Polyclinic, Dr. Charles W. Burr has been

elected to the professorship in this branch. It is also announced that Dr. W. G. Spiller has been elected professor of diseases of the nervous system in the same institution. Another change at the Polyclinic is the resignation from the faculty of Dr. H. Augustus Wilson, who for many years has occupied the chair of orthopedic surgery, and was one of the founders of the school.

The total number of deaths in Philadelphia for the week ending September 25th was 352, a decrease of 9 from the preceding week, and an increase of 3 over the corresponding week last year. Of the total number of deaths reported 122 were in children under five years of age. Of contagious diseases 178 cases were reported, with 22 deaths, as follows: diphtheria, 77 cases, 13 deaths; scarlet fever, 43 cases, 2 deaths; enteric fever, 58 cases, 7 deaths.

SOCIETY PROCEEDINGS.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

THE President, CHARLES L. DANA, M.D., in the Chair.

SYPHILITIC INFECTION OCCURRING TWICE IN THE SAME LOCALITY.

DR. JOSEPH COLLINS narrated the history of a case, which was of interest because of its rarity. The patient, a physician, came to him three or four years ago complaining of pain in the middle finger, which he thought was caused by a hangnail. A diagnosis of Huntarian chancre was at once made, and, in due course of time, the secondary manifestations appeared. He was put upon mercury during a period of about two years, which he tolerated very well. This was stopped for three or four months and the iodid of potassium given, which was not well tolerated, iodid inebriation being manifested throughout the vascular system, and also by eruptions. He was then given four or five ounces of sherry wine each day with the iodid, with the result that the latter was well borne. During the past summer, he worked hard during the hot weather, and began to suffer from attacks which seemed to be due to some disturbance of the vascular system. There was numbness of the right hand, arm, and leg, and also a number of symptoms which seemed to resemble the hemiplegic variety of vascular neurasthenia. This was accompanied by a great deal of mental depression, and he was placed upon vasomotor stimulants.

About two months ago the patient came to him complaining that something was the matter with the finger which had formerly been the seat of the chancre. There was pain and swelling, and the finger had the appearance of being about to fester. A diagnosis of tuberculous syphilid was made and he was placed upon a tonic treatment, together with iodid of potassium, until the lesion disappeared.

DR. A. R. ROBINSON said that several similar cases had been mentioned by Hutchinson, who called it recurring chancre, in which the secondary manifestations

showed themselves years after the first. He saw no reason why such secondary infection should not occur, although he had never seen such a case.

DR. COLLINS replied that in this instance the lesion did not have the appearance of a recurring chancre, it was not greatly indurated, not soft, there was no solution of continuity, and no history of specific infection. It looked more like a bursitis in the beginning.

DR. H. S. DESSAU referred to the use of cocoa wine in combination with iodid of potassium, and said that the result was the same as that which followed the use of sherry wine in Dr. Collins' case. He thought it a valuable aid in the treatment of syphilis, especially where the patient did not respond well to the drug.

THE PRESIDENT said that the administration of ten drops of the tincture of belladonna, three times a day, together with the iodid of potassium, often produced a good effect.

LUPUS OF THE SCROTUM.

DR. CHARLES H. KNIGHT related the case of a child, aged seven months, who was brought to the German Hospital. When the child was one month old, a nodule appeared on the upper segment of the left side of the scrotum, and since then four others had formed in the cutis. There was no involvement of the deeper tissues. Dr. Jacobi removed the nodules, after which a red streak appeared along the penis and glans and a lymphangitis developed, due to secondary infection. None of the glands was involved. The specimen had the gross appearance of lupus and was now being examined by Dr. Prudden. According to Dr. Jacobi, lupus is very rare in young children.

DR. ROBINSON thought there must be some doubt as to the correctness of the diagnosis. In the case under discussion the course of the disease was more acute than that of lupus, and he thought in all probability it was one of lymphangitis.

The paper of the evening, entitled

THE PRESENT STATUS OF ORTHOPEDICS,

was then read by DR. H. L. TAYLOR. (See page 424.)

DISCUSSION.

DR. ROBERT NEWMAN spoke of the difficulty in obtaining a properly constructed and sensible shoe for children, most shoemakers making them so narrow and small that they will not fit any foot. He thought the extensive use of gymnastic exercises, as advocated by Dr. Taylor, a very important point in treatment. It is beneficial in all cases and results in correction of the deformity in some instances. He referred to cases of partial fracture of the coccyx, and expressed the opinion that the treatment of such injuries should belong to orthopedics.

DR. L. DUNCAN BULKLEY referred to two cases of "orthopedic neurasthenia" which had come under his observation. The first was that of a woman, forty-five years of age, who practically had been bed-ridden during six months and was under the care of a gynecologist. She was treated by hydrotherapy and muscle exercise, and

in six months was so well that she began to ride a bicycle. The second patient was a woman who had sustained some injury of the spine by the falling of an elevator and was suffering from traumatic neuritis. She had been wearing some form of jacket or support. This was removed and she was treated in the same manner as the other patient, with the result that she was entirely cured and able to return to her duties as nurse.

DR. S. N. LEO said that he heartily approved of Dr. Taylor's admirable paper. He thought the enormous immigration to this country is responsible for most of the rachitic children who are brought to hospitals and dispensaries to be relieved of deformities. The majority of these cases occur among Italians, who live in over-populated quarters of the city and are always ill-fed. He also thought that the hard benches, and the cramped and faulty position which children are obliged to maintain while in school have much to do with the development of orthopedic diseases.

DR. JOHN F. ERDMANN asked the author of the paper if he had ever seen sloughing follow the use of Bradford's adjuster. He could easily see how this might occur over bony prominences where pressure was brought to bear. He also asked if he had ever employed injections of chlorid of zinc in congenital dislocation of the hip; also, if in using the Bradford genuclast, there was not danger of rupturing the popliteal artery, and referred to a case in which this had been done by manual correction. He also wished to know whether the author had ever employed Dr. Frederick McGuire's method of treating ankylosis by excessive temperature.

DR. JOSEPH COLLINS said that he had seen many cases in which the lack of proper orthopedic treatment at an early stage was very evident. Everyone would agree that after the acute phenomena in anterior poliomyelitis has subsided, a certain amount of benefit could be obtained by the proper employment of electricity, massage and hygienic measures; but there is one point which was not sufficiently recognized by the general practitioner, and that is that these measures must be employed early. He was surprised to hear Dr. Taylor speak favorably of tendon-grafting in anterior poliomyelitis, as the results which he had seen follow this method of treatment had not been good. He thought the subject of lateral curvature a very important one, and was of the opinion that it is due to an original defect in the tissues from which muscle and connective tissue are formed. He did not think that cases of neurasthenia accompanied by irritable spine or any of the traumatic neuroses should be discussed in a paper on orthopedic surgery, as such cases rarely require the attention of the orthopedic surgeon.

DR. DESSAU said that the subject covered by the paper was very broad, and, while the author had handled it from the standpoint of the specialist, he showed very plainly the necessity of the specialist being familiar with the entire field of medicine. He appreciated more than anything else the stress which had been laid upon hygienic measures, which he considered an important point, as unhygienic environment is an important factor in the causation of rachitis.

THE PRESIDENT said that he was surprised that nothing had been said about the use of the bicycle, and was curious to know if any injurious effect is produced by the faulty attitude in which boys usually ride. He did not agree with those who thought that braces or some form of jacket is not necessary in cases of spinal irritation, for he had known of cases in which an apparatus of this kind gave great comfort.

DR. TAYLOR, in closing, thanked the members for the attention they had given his paper, which was a difficult one to discuss in a general society, for the reason that it necessarily had been very much condensed. He had intended to give an outline of the orthopedic science and art at the present time, and he trusted that the paper has not seemed too dogmatic.

Fracture of the coccyx, mentioned by Dr. Newman, is a very painful affection, which requires appropriate treatment, but he did not consider it strictly orthopedic. Dr. Fruitnight had mentioned heavy gymnastics for lateral curvature. At present this is in the experimental stage. The bad sanitary condition of many school-rooms and the prevalence of rachitic diseases among the foreign population had been mentioned. It is a fact that a large proportion of these cases in New York occur among the children of the Russian and Polish Jews and Italians, and there are two reasons for this—their ignorance and their cupidity. They are ignorant as to what constitutes proper nourishment, frequently allowing their children to nurse until two or three years of age, and then feeding them largely on tea, coffee, and cake. Their cupidity is manifested by their saving out of their meager earnings, at the expense of nourishing food. He thought the whole subject of school sanitation and the health of the pupils should be seriously treated.

In regard to sloughing as a result of the use of the Bradford apparatus, he said this is possible, but it is rare when the technic of the operation is well understood. He had had no experience with injections of chlorid of zinc in congenital dislocation of the hip. In regard to heat and electricity in the treatment of ankylosis, good results have been obtained from both, and much is to be hoped from the development of these methods of treatment. The disabilities following multiple neuritis resemble those resulting from infantile paralysis, and similar treatment is required. He had felt justified in speaking hopefully of tendon-grafting from the reports of Goldthwaite and others.

Dr. Collins' remark about lateral curvature had interested him very much. It was the habit to attribute the commoner forms of lateral curvature to muscular weakness and habitual faulty attitude. These explanations have never satisfied him, nor has any explanation which has as yet been brought forward. In regard to bicycle riding, he, of course, did not approve of the doubled-up attitude, but had never known of particular cases of injury from it. Morton's disease sometimes bothers orthopedists as well as neurologists. The treatment indicated is to so adjust the shoe as to remove pressure from the heads of the metacarpal bones. In obstinate cases, the inflamed nerve-filaments should be excised.

REVIEWS.

A SYSTEM OF PRACTICAL THERAPEUTICS. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital. Vol. IV. With illustrations. Philadelphia and New York: Lea Brothers & Co., 1897.

The enormous strides made by therapeutics during the past five years has induced the editor of this well-known "system" to add a fourth volume to the work. In the selection of his contributors he has displayed mature and careful judgment, and the result is a series of most excellent papers and monographs embodying much that has been accomplished in this field during late years.

The introductory chapter on "Recent Advances in Hydrotherapy" by Dr. Simon Baruch is a clear *résumé* of the various applications of water in disease, and furnishes a very satisfactory supplement to the author's article in Vol. I. Of Dr. S. Edwin Solly's article on "The Present Treatment of Tuberculosis," we need only mention that it is fully in accord with the accepted modern views of the subject, and is based largely upon original work. Dr. Edward Martin's chapter on "The Present Treatment of Syphilis" is a very satisfactory one. The author rightly says that absolute reliance cannot be placed on Keyes' method of gauging the dose of mercury; however, he commends the procedure as an excellent one. Dr. J. M. Anders has written on "Typhoid Fever and Malarial Diseases," and the subject is treated in a clear and scholarly manner. It is not generally known that a one-fifth-percent. solution of mercuric chlorid requires six hours to thoroughly disinfect typhoid stools, and that twenty-four hours is required by a five-per-cent. solution of carbolic acid. The urine should be treated in the same manner, as typhoid bacilli have been repeatedly found in this secretion. Among the hypnotics used in typhoid fever we are somewhat surprised not to find trional mentioned.

In Dr. Hare's article on "Influenza," the affection is described as "arising as the result of infection by some agent as yet not discovered." The omission of Pfeiffer's bacillus is also noted in the chapter by Ingles on "Nasal Affections." We are convinced that this is a simple, careless oversight. Dr. Hare has also written the chapters on "Scarlet Fever and Measles," "Diabetes Mellitus," and "The Intestinal Parasites."

The articles are somewhat short but fully satisfactory. Dr. E. Fletcher Ingals' discussion of "Diseases of the Nasal Chambers and Associated Affections," is fully what we would expect from the author's previous writings on this subject, and the article is well illustrated. The chapter on "Diseases of the Uvula, Pharynx, and Larynx" by Dr. S. Braden Hyle, gives in brief compass the various therapeutic measures used in these diseases. Dr. William H. Park in the chapter on "New Facts and Methods in the Treatment of Diphtheria" contributes many valuable tables of statistics of the antitoxin treatment in New York City, and gives a clear *résumé* of the methods used. "Asthma, Bronchitis, and Whooping-cough" receives

full and systematic consideration by Dr. Norman Bridge.

Dr. A. J. McCosh's discussion on "Pleural Effusion and Empyema; Abscess and Gangrene of the Lung" is exhaustive and scholarly, and a very satisfactory consideration of the etiology of these diseases is given. All directions for the surgical treatment are clearly detailed. Dr. James B. Herrick contributes the chapter on "Pneumonia, Croupous and Catarrhal, and Pleurisy" and presents the subject in a clear and straightforward manner, mentioning the various "specifics" which have been advocated in pneumonia. The chapter on "Diseases of the Heart" by Dr. Frederick P. Henry fairly covers the ground. The Schott treatment is fully described. "Diseases of the Blood" by Dr. Ralph Stockman covers less than twenty pages and is supplementary to Shattuck's article in Vol. II. The etiology and pathology are well discussed, and the author gives references to several of his recent writings on the subject. Dr. Joseph Eichberg has written on "Diseases of the Liver," and although most of the pathologic conditions affecting the liver receive separate headings, the chapter is not entirely satisfactory.

"Diseases of the Thyroid and Thymus Glands, Myxedema, Cretinism, Graves' Disease, and Obesity" is the title of Dr. S. Meltzer's contribution, and it gives evidence of an intimate acquaintance with the literature on the subject and of a large personal experience. The ground is well covered, and most of the recent views as to the etiology of these diseases are given. In the chapter on "Diseases of the Stomach" by Dr. Thomas G. Ashton, we believe that too much weight is given to the influence of electricity in the treatment of chronic gastritis and dilatation of the stomach. The use of methyl-blue in the treatment of cancer of the stomach is mentioned, but methylene blue is undoubtedly the drug referred to. Dr. George R. Fowler has written on "Peritonitis, Non-operative and Post-operative, Appendicitis, Paratyphilitic Abscess, and Obstruction of the Bowels." His classification of the various forms of peritonitis is not at all satisfactory. In discussing perforative peritonitis, the author says: "In this variety the infection has its origin in the intestinal canal." The perforation of any abdominal or pelvic abscess may cause this form of peritonitis, but the etiologic factors together with several others are all classed under the general term "infectious peritonitis." The other forms mentioned are, "symptomatic peritonitis," "tubercular peritonitis," and "undetermined infections."

The chapter on "Diseases of the Rectum and Anus" by Dr. Joseph M. Matthews gives in a practical way the usual means for dealing with the affections. Dr. W. W. Johnston discusses "Diarrheal Diseases and Dysentery" in a most satisfactory manner, and all the most recent methods of treatment are enumerated. "The Modern Treatment of Diseases of the Skin" is by Dr. H. W. Stelwagon, who has briefly described some of the rarer skin diseases not mentioned in Vol. III., in addition to the modern treatment of the more common forms. A most satisfactory chapter is that on "Spasmodic Affections of the Nervous System" by Dr. Joseph Collins. The author advises larger doses of exalgin in chorea, especially in very acute cases, but liberal doses of iron should be

administered at the same time. Arsenic, however, is advocated in all cases, but extremely large doses are not necessary. The author's condemnation of operations on the generative organs for the cure of hysteria meets with our approval. Following this is an excellent chapter on "The Drug Habits" by Dr. F. X. Dercum. A valuable and most interesting article on "The Disorders of Sleep" is contributed by Dr. Hugh T. Patrick, and the value of hydrotherapy as a hypnotic procedure is fully appreciated.

The remaining articles are the "Therapeutics of Renal Diseases" by Dr. Nathan S. Davis, Jr.; "Therapeutics of the Genito-urinary Diseases of Women" by Dr. Edward E. Montgomery; "Therapeutics of the Male Genito-urinary Tract" by Dr. William T. Belfield; "Diseases of the Eye and their Treatment by the General Practitioner" by Dr. Casey A. Wood; and "Diseases of the Ear, and their Treatment by the General Practitioner" by D. S. Maccuen Smith. Space does not admit our reviewing these chapters in detail, but we have read them all with interest and profit.

All in all, the volume before us contains a wealth of valuable information and is one deserving of highest commendation. We congratulate the editor and the makers of the book for an extremely satisfactory modern work on practical therapeutics. The volume forms an excellent complement to those already published and gives the work a completeness, which if it did not demand, is exceedingly satisfactory nevertheless.

TWENTIETH CENTURY PRACTICE. BY LEADING AUTHORITIES OF EUROPE AND AMERICA. Edited by THOMAS L. STEDMAN, M.D. In twenty volumes. —Volume IX., Diseases of the Digestive Organs. New York: Wm. Wood & Co., 1897.

JOHANN MIKULICZ and Werner Kümmel open the ninth volume with a description of the local diseases of the mouth, including those of the lips, gums, and cheeks. Especially to be recommended is the description of the diseases of the tongue.

In the section devoted to the diseases of the intestines, Ewald gives an excellent account of the treatment of habitual constipation. The article on appendicitis and perityphlitis is well worth the reading. We looked in vain, however, for a systematic classification of the varieties of appendicitis, and we find practically no mention of the gangrenous form of that disease.

Virgil P. Gibney and J. B. Walker of New York contribute a well-written and well-illustrated article on hernia and its treatment. The section devoted to diseases of the spleen comes from the pen of Dr. Alfred Stengar of Chicago. Professor Semmola and Dr. Geoffredi write on the diseases of the liver. The authors give an admirable account of the physiology of the liver and the general symptomatology of hepatic diseases.

The article by Murphy of Chicago is a comprehensive, yet concise description of the symptoms and treatment of diseases of the gall-bladder. The section on "Movable Kidney," by Kendal Franks, seems to us to be out of place in a volume devoted to the "Diseases of the Digestive Organs." We cannot understand why it was

inserted in this volume. The paper, however, is well written and well illustrated. The author makes a clear distinction between floating and movable kidney; the former always being congenital. The author gives a very satisfactory explanation of the infrequency with which movable kidney is found at the *post-mortem* table.

THERAPEUTIC HINTS.

The Treatment of Common Colds.—BLONDEL (*Revue de Ther.*, August 1, 1897) recommends the following treatment for acute bronchotracheitis.

1. In the beginning, and only in the beginning, of the illness:

℞ Tincture of aconite root . . .	15 drops
Tincture of ipecac. . . .	2.5 drams
Menthol } aa	1.2 grains
Saccharin }	
Alcohol	10 drams
Syrup of tolu	4 ounces.

Two or three teaspoonfuls of this mixture are to be taken at intervals of one hour after the two principal meals of the day.

2. For the coryza one may use a powder composed of equal parts of biborate of soda, alumnol, and powdered sugar.

3. If the treatment is undertaken later two teaspoonfuls of the following mixture may be taken every two hours:

℞ Tincture of aconite root . . .	15 drops
Antipyrin	30 grains
Syrup of codein	3 drams
Syrup of polygala	5 drams
Syrup of tolu	1 ounce
Syrup of cherry laurel	13 drams.

4. For the final period, that of expectoration, etc., turpentine, creosote, or guaiacol, may be given in capsules after each meal.

Pills for the Treatment of Sciatica.—

℞ Pulv. opii	} aa	gr. xv
Pulv. ipecacuanhæ		
Sodii salicilat.		3 iss
Ext. cascariæ segrad.		q.s.ad.

M. Ft. pil. No. xx. Sig. One to three pills daily.—Richardson.

For Acne Rosacea.—In the local treatment of the first grade of acne rosacea, Van Harlingen reports rapid results from the application, several times daily, of a lotion composed as follows:

℞	Sulphuris precip.	.	.	.	.	3 i
	Pulv. camphoræ	.	.	.	.	gr. v
	Pulv. tragacanth	.	.	.	.	gr. x
	Aq. calcis	} aa	.	.	.	f 3 i.
	Aq. rosæ		.	.	.	

M. Sig. Apply night and morning.

For Pruritus Vulvæ.—One of the best preparations in the treatment of this affection is the following:

℞ Zinci oxidi	3 vi
Acid. salicylici	gr. xv
Glycerini	3 vi.

M. Sig. Apply at frequent intervals.

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ORIGINAL ARTICLES.

WOUND-INFECTION WITH THE BACILLUS ÆROGENES CAPSULATUS.¹

BY JOHN F. ERDMANN, M.D.,
OF NEW YORK;

ATTENDING SURGEON TO ST. MARK'S AND GOUVERNEUR HOSPITALS;
WITH DISCUSSION,

BY EDWARD K. DUNHAM, M.D.,
OF NEW YORK;

DIRECTOR OF THE CARNEGIE LABORATORY;
AND BACTERIOLOGIC REPORT,

BY HARLOW BROOKS, M.D.,
OF NEW YORK;

ASSOCIATE IN BACTERIOLOGY, PATHOLOGICAL INSTITUTE OF THE
NEW YORK STATE HOSPITALS; ASSISTANT CURATOR
OF BELLEVUE HOSPITAL.

ALTHOUGH the subject of the bacillus ærogenes capsulatus belongs to the field of the bacteriologist, the infection by the bacillus is so powerful and rapid as to present a clinical picture to the surgeon well worthy of study.

During the year 1891 Dr. Wm. Welch of Baltimore wrote an article describing the organism and its methods of cultivation. In the *Journal of Experimental Medicine*, January, 1896, a paper was published, to be concluded at a later date, by Drs. Welch and Simon Flexner, entitled "Observations Concerning the Bacillus Ærogenes Capsulatus," in which a series of twenty-three personal observations by these gentlemen is reported. In each of these cases but a brief history is given, with a view of demonstrating the presence, *ante-* or *post-mortem* of this bacillus, and from this article I shall make free collations from the group of strictly surgical cases presented.

It is said that this bacillus is, or may be, conveyed through the soil, and, from an analysis of all cases reported in which an examination of the intestinal contents has been made, I am inclined to believe its chief habitat in man is the intestinal tract, from whence it is conveyed by the lymphatics and blood to various regions of the body. It will be noted that in several of the surgical cases the infection was particularly marked in cases involving the anoperineal region, several of these being genito-urinary cases, and in addition to these I have had access to the proof of an article, by Dr. E. K. Dunham of this city, published in the *Johns Hopkins Hospital Bulletin* for April, 1897, containing the histories of five cases, the second of which is the one reported by

myself, and also one case, unpublished, occurring in the service of Dr. Bryant, at St. Vincent's Hospital, of this city.

For a long time, and even at present, cases of infection by the bacillus ærogenes capsulatus were called malignant edema, air-embolism, emphysematous gangrene, etc., but since the study of this bacillus by Drs. Welch, Flexner, and Dunham we know that the cases are entirely different, at least in the causation, although decidedly similar in their clinical appearance. This confusion is due to the development of a type of gangrene and marked emphysema in most cases, with delirium and fever allied to the cases of malignant edema. On autopsy in cases of infection with this bacillus we have the "Schaum-organe" (so-called by the Germans) as a result of the development of areas of gas in various viscera which gives the peculiar foam or "schaum" appearance to these structures.

The infection may be pure or mixed. By analysis of the reported cases of Welch, Flexner, and Dunham, it will be seen that there were two cases of pure infection, with two deaths, and fourteen cases of mixed infection, with ten deaths, although one of these was probably due to tetanus; that the organisms most frequently found were the bacillus coli communis and the streptococcus pyogenes, and that in several patients who recovered the streptococci were found. From these results it is readily seen that all recoveries were instances of mixed infection, and also that patients with mixed infection in whom the disease terminated fatally lived longer than those in whom there was a pure infection. This fact would incline us to consider cases of mixed infection as being by far the more favorable. In a case of pure infection (Frankel) there was no pus, but a turbid, brownish fluid, and a grayish, macerated condition of the underlying muscles were found. This condition was found in the case reported by myself in the article mentioned, while in cases of mixed infection pus is usually found. In a number of the cases reported the bacillus was observed only on *post-mortem* examination, due to the fact that cultures were not taken during life. This naturally causes our statistics to lose a certain degree of interest, but, at the same time, in cases of infection of unbroken surfaces it can only be reasoned that the bacillus must have been present during life, but developed after death, as it is proven that this germ multiplies rapidly in the dead. The infection, as be-

¹ Read before the Surgical Section of the New York Academy of Medicine, May 10, 1897.

fore stated, may be conveyed by means of the blood, or by instruments, as in one case reported by Dr. Dunham, following catheterization by the patient himself. Two cases reported by Frankel, contained in the article by Welch and Flexner, were due to hypodermic injections, one of morphin and the other of camphor oil. One case reported by Halsted was due to an infected bullet.

In but one case out of twelve reported by Welch and Flexner a chill is reported as the first symptom.

As a rule, delirium, rapid pulse, high temperature (101° to 105.5° F.), with emphysema and discoloration of the diseased area, or marked abdominal distension when the peritoneal cavity is involved, are the main symptoms, the emphysema and discoloration being very rapid. Upon incising the emphysematous tissues the escaping gas, when light is applied, will burn with a blue flame. The duration of the disease after evidences of infection varies from four to forty-eight hours in the pure and from forty-eight hours to ten days in the mixed type. The sudden delirium and general condition of stupor or somnolence seem to be due to a toxemia rather than to blood-involvement by the organism.

The importance of an early diagnosis in these cases is of inestimable value, as amputation, when possible, or liberal incisions with free drainage in cases of pure infection, is the only rational treatment; while in cases of mixed infection, the evidences not being so acute, evidently held in abeyance by the mixture of bacilli and cocci, free incisions for drainage, followed later by amputation if the disease is rapidly progressing, is indicated.

The history of my case is as follows:

L. M., seven years old, fell from the fourth floor of a house to the ground, on September 19, 1896, at about 3 P.M., and sustained a compound fracture of the right humerus at about its middle, and also a small scalp wound. He was seen about two hours later, and in addition to the above injuries was found unconscious. The arm was very dirty and grimy. Considerable contusion of the right shoulder was sustained. Every antiseptic and aseptic precaution was taken, and the patient was put to bed in very poor condition. At 8 P.M. his temperature was 100° F., pulse 130 and respirations 44. The extremities were cold. On September 20th the temperature throughout the day was from 101° to 101.6° F., pulse 130 to 140, and respirations 30 to 42. The patient was unconscious. September 21st, 9 A.M., temperature 101.6° F., pulse 150, respirations 42; 2 P.M., forty-seven hours after the injury, temperature 104.4° F., pulse 144, respirations 44.

Apparently the increase in temperature and pulse was the first evidence of the infection. The dressings were removed, and the arm and pectoral region of the right side were found tense, of a greenish-bronze color, and, upon incising, a peculiar brown-

ish fluid with slight odor escaped. The muscles of the arm were thoroughly macerated. As the process had extended to the chest, amputation was deemed inadvisable, but free drainage was made with incisions, and bichlorid of mercury dressings were applied. At 9 P.M. his temperature was 105.4° F., pulse 166, and respirations 32. September 22d, 3 A.M., temperature 104.6° F., pulse 170, respirations 40. The arm was again dressed. Edema had extended to the right half of the chest and shoulder and down the forearm. There was at this time some emphysema present. The patient died at 3 P.M., three days after the injury and one day after the first marked evidences of this infection. Thinking the case to be one of malignant edema, a culture was taken before death, but after the second dressings had been removed.

In addition to this case, I will briefly summarize those published in the articles of Welch, Flexner, and Dunham having a distinct surgical aspect, and comment upon the cases of infection with medical bearing. There were ten observations by the first-named observers upon general surgical cases occurring in the services of Drs. Halsted, Tiffany, Kelly, and Mann, which I have arranged in the accompanying table, to which I add the five cases, including my own, reported by Dr. Dunham, and the case already mentioned, for which I am indebted to Dr. J. D. Bryant of New York.

It will be observed that the best results followed in cases in which amputation was performed, and that in all cases of recovery the infection was of the mixed variety. The organism most frequently found in the cases of mixed infection was the streptococcus, and in six of the tabulated cases—Nos. III., XII., XVII., and XVIII., by Welch and Flexner, and Nos. IV. and V., by Dunham—the colon bacillus was found. In addition to these tabulated cases there are four cases of Frankel's (reported by Welch and Flexner), one of pure infection and three of mixed, three patients recorded as dying, while the result in the fourth case (of mixed infection) was not stated.

In looking over the medical cases reported by Welch and Flexner we find the bacillus present in the peritoneal cavity in the following: No. VIII., cancer of the duodenum, with perforation. No. X., typhoid, with perforations. No. XI., typhoid, with perforations. No. XIII., diabetes mellitus and cirrhosis of the liver. No. XIV., arteriosclerosis, chronic diffuse nephritis, etc. In Cases No. XV. (acute endocarditis and chronic Bright's disease) and XVI. (thoracic aneurism and pulmonary infarctions) the bacillus was found in the infarcted areas and in the pleura, and in these two cases the authors question the possible infection from the lungs or conveyance from the intestine.

From the above observations we deduce the following:

1. That, from the frequency of the presence of this bacillus in the peritoneal cavity, and also its frequent association with the colon bacillus, we are justified in believing its habitat in man to be the intestinal tract.

2. That the infection may be conveyed by means of the blood from its habitat or introduced from without, probably from the soil.

3. That, while in pure infections the progress is extremely rapid and decidedly grave, in mixed in-

fection it is protracted and the prognosis is not so grave.

4. That the use of an antitoxic serum, or the infecting of cases of pure infection with the streptococcus, would at present seem justifiable.

5. That liberal incisions, with drainage, or early amputation, is demanded in all cases of infection with the bacillus *aerogenes capsulatus*.

Since writing this paper Dr. Halsted's open-bath method of treating cases of sepsis and cases of infection with this bacillus has come to the attention of the author, and, after seeing the experiments of Dr.

CASES REPORTED BY DRs. WELCH AND FLEXNER.

	Case of Dr.	Sex.	Injury.	Operation.	Result.	Pure.	Infection Mixed with	Bacilli Found	
								<i>Ante-mortem.</i>	<i>Post-mortem.</i>
	Halsted.	M.	Gun-shot of knee.	Amputation of thigh.	Recovered.	No.	Staphylococcus aureus and staphylococcus pyogenes.	Yes.	.....
II.	Halsted.	M.	Compound fracture of leg.	Amputation of thigh.	Recovered.	No.	Staphylococcus albus.	Yes.	.....
III.	Halsted.	M.	Injury of hip and wound of rectum.	Extensive incisions.	Died.	No.	Intestinal (?) bacilli and streptococci.	Yes.	.....
IV.	Tiffany.	M.	Compound comminuted fracture of patella.	.....	Died.	Yes.	.....	Not stated.	Not stated.
V.	Tiffany.	M.	Compound comminuted fracture of forearm.	Amputation of arm.	Recovered.	No.	Pyogenic cocci.	Yes.	Yes.
VI.	Mann.	F.	Gangrene (?) of hand and forearm.	Amputation of arm.	Recovered.	No.	Streptococci.	.....	From the amputated arm.
VII.	Halsted.	F.	Phlegmon of hand and forearm.	Amputation.	Died.	No.	Streptococci and staphylococci.	None found before death.	Twenty-four hours after death.
XVII.	Halsted.	M.	Catheterization for retention of urine, stricture, sepsis.	.....	Died.	No.	Colon and streptococci.	Not examined.	Three-quarters of an hour after death.
XVIII.	Halsted.	M.	Catheterization for enlarged prostate, retention.	.....	Died.	No.	Colon and pyogenic.	Not examined.	Yes.
XII.	Kelly.	F.	Strangulated umbilical hernia.	Operation.	Died.	No.	Colon and pyogenic.	Not examined.	Yes.

CASES REPORTED BY DR. E. K. DUNHAM.

	Case of Dr.	Sex.	Injury.	Operation.	Result.	Pure.	Infection Mixed with	Bacilli Found.	
								<i>Ante-mortem.</i>	<i>Post-mortem.</i>
I.	Dennis.	F.	Cellular infection about the lower jaw.	Incision.	Died.	No.	Pyogenic cocci.	Yes.	Yes.
II.	Erdmann.	M.	Scalp wound, compound fracture of right arm.	Free incision.	Died.	No.	Pyogenic cocci.	Yes.	Not examined.
III.	Gouley.	M.	External urethrotomy primarily, passage of sterile sound secondarily.	.....	Died.	Yes.	.....	Yes.	Yes.
IV.	Hotchkiss.	M.	External urethrotomy primarily, passage of sterile sound secondarily.	.....	Died.	No.	Coli communis (?)	Yes.	Yes.
V.	Abbe.	M.	Prostatic hypertrophy, catheterization.	Incision.	Died.	No.	Coli communis and streptococci.	Yes.	Not stated.
I.	Bryant. ¹	M.	Compound fracture of leg.	Incision, amputation.	Died.	No.	Streptococci and staphylococci.	Yes.	.....

¹ Unpublished.

Total, 16 cases; 12 males, 4 females. Died, 12; recovered, 4. Pure, 2. Infection mixed in 14; 6 with colon bacilli.

E. K. Dunham and hearing his discussion of this paper, the author advocates most heartily the open-bath treatment, as far as possible, in these cases.

DISCUSSION BY DR. EDWARD K. DUNHAM.

Infection with the bacillus *aerogenes capsulatus* (Welch) differs from the infections with the ordinary pyogenic cocci in that the bacillus is a strict anaërobe; *i.e.*, is incapable of growing in the presence of free oxygen. It appears to me that advantage might be taken of this fact in contriving an appropriate treatment for cases of infection by this bacillus. If we can so arrange matters that the bacilli within the tissues are exposed to a sufficient amount of oxygen, we shall be able to check their growth and arrest the progress of the destruction they occasion.¹

In devising a mode of treatment with this end in view, the question of how much oxygen must be present to stop the development of the bacillus is of prime importance. I have endeavored to approach this question by means of the following experiment, suggested by the procedure followed by Dr. Halsted of the Johns Hopkins Hospital in his treatment of cases of severe infection with full and continuous hot baths:

A series of six test-tubes, provided with a small inner tube entering at the side and extending nearly to the bottom, was filled to various heights with nutrient bouillon and then sterilized by moist heat. Into each tube a number of short threads containing spores of the bacillus *aerogenes capsulatus* were then introduced, and hydrogen was passed through the bouillon, by means of the small inner tube, for half an hour. The object of this was to displace the oxygen in the bouillon. The tubes were then placed in an incubator kept at 35° C. The depth of bouillon in the tubes was 3, 2¾, 2¼, 2, 1½, and ¾ inches respectively.

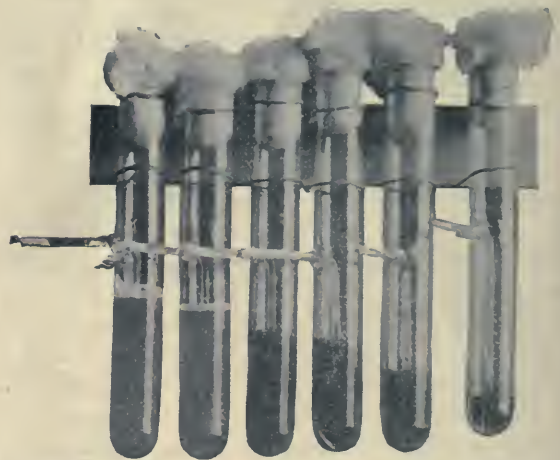
After the expiration of fifteen hours the tubes were taken from the incubator and examined. An abundant growth was found in the two tubes containing the most bouillon, the latter being very cloudy throughout. There was a moderate sediment of bacilli in the bottom of these tubes, and minute bubbles of gas could be seen rising through the bouillon and collecting in foam on its surface. The other four tubes, containing less bouillon, appeared clear. (See Fig. 1.)

I inferred from these results that the bouillon at the bottom of the two tubes containing the most broth remained sufficiently free from oxygen, after the flow of hydrogen had been stopped, for the spores which

were present to develop into bacilli and for the latter to grow with a luxuriance ample enough to maintain anaërobic conditions in the bouillon by the production of the gas generated by the bacillus itself. This gas we know to consist chiefly of hydrogen and carbon dioxid (hydrogen, sixty-four per cent.; carbon dioxid, twenty-eight per cent.), so that its constant evolution within the culture-medium would be equivalent to the continuous passage of a moderate amount of those gases through the broth. In the case before us this evidently sufficed to maintain anaërobic conditions within the tubes containing the largest amount of bouillon.

In the tubes which appeared to be clear the absorption of atmospheric oxygen by the bouillon had extended sufficiently deep and had been abundant enough to check the development of the spores at the bottoms of the tubes. In the two middle tubes of the series a very slight clouding of the bouillon in

FIG. 1.



Test-tubes containing different quantities of bouillon, showing extent of growth of the bacillus *aerogenes capsulatus*.

the small inner tube could be detected. It appeared, then, that the penetration of the oxygen into this inner tube was more tardy than its penetration through the surrounding broth. This may have been due to the tightness of the cotton plugs in the outer ends of the small tubes, for it was noticed that a considerable pressure was necessary in order to force the hydrogen through those plugs when the cultures were being prepared.

If we assume that the rate at which water will take up oxygen from the air is the same as the rate at which bouillon will absorb it, it appears to me that the results of this simple experiment throw some light upon the efficacy of the full-bath treatment of cases of infection by this bacillus. If incisions into the infected parts can be made free enough to expose the tissues containing the bacillus to the close

¹ The mere presence of oxygen does not *kill* the bacillus, but it prevents its growth, and therefore the advance of the infectious process, allowing time for further measures tending to the destruction of the bacterium to be put into practice.

action of water, the oxygen which the latter contains may be sufficient to check the growth of the bacillus.

There is one factor which is left out of consideration in this experiment, namely: the influence which might be exerted by the tissues to impede the passage of oxygen from water surrounding the tissues to the bacilli which they contain.

In order to gain some information on this point, I made the following experiment: About 5 c.cm. of a twenty-four-hour bouillon culture of the bacillus was injected into a vein of a rabbit, and, after a few minutes, the animal was killed. The liver was at once removed and pieces of it placed in dishes containing recently boiled water. These dishes, with their contents, were placed in an incubator. The fragments of liver must have contained many bacilli disseminated throughout their substance by the blood circulating in the hepatic capillaries during the life of the animal. The water in which the pieces of liver were immersed had been deprived of at least a large proportion of the oxygen it had contained in solution by the boiling, but its surface was freely exposed to the atmosphere. The least measurement of the pieces of liver ranged between one-half and one centimeter, and they were covered by from one to two centimeters of water.

After seven hours all the pieces of liver were crowded with small bubbles of gas, which so diminished their specific gravities that they floated upon the water with an immersion of only about two-thirds of their bulk. They were surrounded by a coarse foam, due to gas which had escaped from them and become imprisoned in the albuminous fluid resulting from the maceration of the tissues.

This experiment shows that the bits of tissue sufficiently impeded the passage of oxygen from the air and water to the bacilli to enable the latter to develop and evolve enough gas to maintain anaërobic conditions suited to their further and rapid multiplication.

Thinking that the deoxygenation of the water in which the pieces of liver were immersed in the last experiment might be the cause of the unfavorable results, I repeated the experiment, using water containing five and ten per cent. of peroxid of hydrogen in the place of boiled water. The results of this experiment were almost identical with those of the preceding one. At the end of eight hours all the pieces of liver were floating on the surface of the liquid in the dishes, and contained bubbles of gas readily discernible through the peritoneal covering.

In the first experiment, made with bouillon, the bacilli were placed under the least advantageous conditions for their development, for they were directly exposed to the action of whatever oxygen might be

present in the bouillon. In the other two sets of experiments the conditions were most favorable for the development of the bacillus, for not only were they protected from access of oxygen by a layer of tissue, but the tissue in which they were situated contained sugar, which we know would favor the production of abundant gas and so facilitate the continuance of anaërobic conditions.

In order to eliminate this last condition, I asked my friend Dr. Le Boutillier to repeat the last set of experiments, using bits of kidney instead of liver. His results were as follows: The pieces of kidney measured from $\frac{1}{2}$ to about $1\frac{1}{2}$ centimeters in their least diameters. They were placed in dishes containing $1\frac{1}{4}$ - and $2\frac{1}{2}$ -per-cent. aqueous solutions of peroxid of hydrogen, and were kept in an incubator

FIG. 2.



Section of liver infected by the bacillus *aerogenes capsulatus*, showing large spaces filled with gas as a result of the infection, and groups of bacilli.

for twenty-one hours. At the end of that time the pieces of tissue were removed from the dishes and placed in a five-per-cent. solution of formaldehyde. Sections made through the centers of these bits of kidney after they had been hardened failed to reveal the presence of spaces that would have demonstrated the production of gas in the tissues before they were hardened. That the bacilli were present in the tissues was shown on staining the sections, when a considerable number of bacilli could be seen in the renal capillaries. The bacilli were so scattered that it appeared highly improbable that they had multiplied.

These results are in sharp contrast with those obtained in the experiments with pieces of liver. Sections of those pieces revealed large spaces (Fig. 2) in the tissue, which had evidently been filled with gas, and

large groups of bacilli, the result of multiplication within the tissue. I ascribe this difference to the presence of glucose in the liver and its absence in the kidney, the glucose favoring the rapid and abundant evolution of gases free from oxygen.

A very striking and, it appears to me, very important result of the foregoing experiments is the demonstration which they afford of the unexpected ease with which these bacilli can establish and maintain anaërobic conditions when they have once begun to multiply in a medium suited to their growth. This fact enforces the necessity of prompt and thorough surgical treatment.

There is one factor in the problem of treatment the importance of which I have not been able to estimate in these experiments, and that is the inhibiting influence exerted upon the bacilli by living tissues. In the experiments which I have made the tissues have been dead, and whatever antagonism might have existed between living tissue and the bacilli was excluded. That such an antagonism exists and that it is considerable is shown by the fact that artificial cultures of the bacillus soon lose their virulence, and the bacilli they contain are incapable of multiplying in the bodies of living animals. How much the loosely combined oxygen carried to the tissues by the circulating blood may contribute to this result I am unable to say, but it is not improbable that it may have considerable influence.

Although the crucial test of modes of treating this alarming infection must rest on clinical experience, it appears to me that the few experiments I have made lead to the inferences that it would be wise to expose the tissues as freely as possible to the influence of oxygen, and especially to do away as thoroughly as possible with dead tissue, which would favor the multiplication of the bacillus, and the establishment of anaërobic conditions for its further increase. It appears not improbable that the immersion of the infected part or of the whole body in water, frequently renewed or oxygenated with peroxid of hydrogen, would meet these requirements, and, perhaps, by aiding the elimination of poisonous substances produced by the bacillus, diminish the intensity of the toxemia which seems to be a potent factor in causing the prostration observed in cases of this infection.

BACTERIOLOGIC REPORT BY DR. HARLOW BROOKS.

The material for examination was received at the Carnegie laboratory in a sterile test-tube in which it had been placed about seventy-two hours before. It was found to give off a very foul odor. Cover-slip preparations demonstrated the material to be made up of blood-clot and pus, in which were found many

cocci, together with a large bacillus somewhat resembling the bacillus anthracis. The ends of the bacillus were slightly rounded, and in places a distinct capsule was evident. It reacted to Gram's stain, also staining with the usual anilin dyes.

Inoculations were made on slant agar tubes, half of which were placed in the pyrogallate jar after the method of Buchner, and the remainder left under aërobic conditions. After forty-eight hours in the incubator the agar in both sets of tubes was covered with a profuse growth, those grown anaërobically being distinguished from the others by the very foul odor which emanated from them. Cover-glass preparations demonstrated the aërobic growth to be one of various cocci, while the growth in the anaërobic tubes was found to contain, in addition to the cocci, a large bacillus similar in form and staining reactions to that seen in the cover-glass preparations which had been made directly from the original material. In the growth, however, many of the bacilli were found in end-to-end pairs, in these pairs the length of each bacillus being somewhat less than the average length of the single bacillus. So active had been the production of gas in these tubes that in several the agar had been forced up from the bottom of the tube and the condensation-water was covered with small bubbles. The mixture with the cocci seems to have prevented the formation of any characteristic colonies.

Loops of the condensation-water which seemed most rich in the growth of the bacillus were inoculated into bouillon tubes, which, after being placed in the pyrogallate jar, were left in the incubator for twenty-four hours, at the end of which time the media was cloudy with growth, and the top of the fluid was covered with bubbles. Cover-slip preparations showed the same mixture as before, but the growth of the bacillus now predominated. One cubic centimeter of this mixed culture was injected subcutaneously into the abdominal wall of a large guinea-pig. After a few hours the animal became quite sick; it burrowed under the hay in the corner of its cage and cried and trembled when disturbed; the fur was ruffled and the eyes were kept closed. In a few days, however, full recovery apparently took place.

A few drops of the same culture was injected into the ear-vein of a rabbit, and five minutes later the animal was killed and placed on the incubator overnight. In the morning great emphysema of the subcutaneous connective tissue over the entire body was found to be present. The eyeballs were forced from their sockets, and a blood-stained, foul-smelling fluid was escaping from the nostrils and mouth. Puncture of the skin gave vent to a gas which smelled

like ammonium sulphid, and burned with a pale-blue flame.

At the autopsy the liver was found to be soft, of a dull clay color, and many air bubbles were present beneath the capsule and throughout the entire substance of the organ. On stripping off the capsule the surface of the organ was found pitted with these air spaces, which were apparently the much dilated vessels. The kidneys were edematous, soft, and pitted with air spaces similar to those seen in the liver. The mucous membranes of the bladder and stomach were edematous and covered with bleb-like elevations. In many places the walls of the intestine were completely broken down by the extensive *post-mortem* changes in them. The heart was distended by bloody foam and by blood-clot riddled with air spaces. The lungs showed extensive emphysema with edema. The subserous and subcutaneous connective tissues of the entire body were infiltrated with bubbles of gas.

Cover-glass preparations which were made from the various tissues showed in every instance the presence of the large bacilli in great numbers, but cocci were found, as before, in all of the preparations. Small portions of the culture were spread over large surfaces of culture-media, and by this means it was possible, after some trouble, to secure isolated colonies from which pure cultures of the bacillus were obtained. The bacillus was found to be a broad, straight rod, about five μ in length. The ends were slightly rounded. In cultures it was often found in end-to-end pairs, evidently dividing in this manner. The bacillus, when found in the tissues, is surrounded by a broad, indistinct capsule, but this was not the case in the cultures. It did not form spores on the media on which it was grown, although it was not cultivated on blood-serum, as Dr. Dunham has shown to be necessary for the production of spores in the bacillus *aerogenes capsulatus*. It grew most luxuriantly in alkaline bouillon, and fairly well on agar-agar.

The rapidity of growth varied greatly. It seemed to grow much more slowly and in a less characteristic manner as the number of implantations increased. It grew only under anaërobic conditions, and very slowly, unless at the incubator temperature. The colonies appeared on agar-agar as raised, grayish, opalescent spots. The growth was most luxuriant where the medium was moist. Some of the most characteristic colonies developed between the wall of the tube and the body of the medium. The bacillus accepted the ordinary anilin dyes, and gave a very positive reaction to Gram's stain. Motility was not present.

Injection of a pure culture of the bacillus into the

circulation of a rabbit a few moments before the animal was killed gave rise to the emphysema as described following the intravenous injection of the mixed culture. Subcutaneous inoculation of guinea-pigs failed to produce fatal results, although in every instance the animal showed considerable reaction to the inoculation.

The bacillus found in this case appears to be identical with that described by Welch and Nuttall as the bacillus *aerogenes capsulatus*. It is difficult to determine the exact position which the bacillus bore in this instance, since, as from the history, it is plainly shown that death was due to infection, yet the mixed cultures made directly from the original material, when inoculated into guinea-pigs, failed to produce fatal results; but it must be remembered that about seventy-two hours elapsed between the time when the material was procured and when the first tube was placed in the incubator. It has been shown by Dr. Dunham that the bacillus *aerogenes capsulatus*, when first taken from a subject dying of the disease, is very virulent, producing death when injected into animals within a few hours, but that it soon loses this intense virulence as the material grows old or as the number of successive implantations increases. Taking this fact into consideration, it may safely be assumed that the time elapsing between the removal of the material and the first inoculation was sufficient for the bacillus to become to a large extent attenuated; but, unfortunately, in the absence of an autopsy we are unable to say whether the lesions present in this case were those which have been shown to be characteristic of this infection.

THE OPERATION ITSELF IN APPENDICITIS.¹

By LEWIS S. M'MURTRY, M.D.,
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HITHERTO our discussions upon appendicitis have been directed for the most part to the pathologic condition as related to symptomatology with a view to early diagnosis and determination of the question of operative interference, with only brief and incidental consideration of the operative technic. The multifarious types presented by the disease, the variety in character and extent of the lesions, the several stages of progress in which operation is performed, the complications and sequelæ, compose a series of requirements in operating which may only be successfully met by the best surgical judgment and operative skill. In view of these facts, and the additional one that the profession has very generally

¹ Read at the Tenth Annual Meeting of the American Association of Obstetricians and Gynecologists, Niagara Falls, N.Y., August 17-20, 1897.

come to recognize appendicitis as a strictly surgical disease, cured only by operation, I have selected the operation itself as an appropriate and profitable theme for discussion at this time.

I propose to consider the subject under the following heads: (1) The incision. (2) Dealing with adhesions and with abscesses. (3) Removal of the appendix. (4) Drainage and isolation of the peritoneum by gauze.

The Incision.—Concerning the incision, three important considerations must be observed, the first being to obtain easy access to the *caput coli*, with sufficient working space, the second, to secure all natural advantages to facilitate drainage, and the third, to secure complete repair of the parietal structures incised and thereby prevent the occurrence of hernia.

The early operations for appendicitis were mostly undertaken in extreme cases, in which suppuration had occurred, and consisted in cutting into the abscess and evacuating and draining the same. For this purpose the vertical incision was adopted and is yet practised by many surgeons. This incision is made along the external border of the right rectus muscle, a little to the inner side of the right semilunar line. It should intersect a line drawn from the anterior superior iliac spine to the umbilicus, very nearly midway, and should be about three inches long. The sheath of the rectus had best be pushed aside slightly and not opened, so as to lessen the amount of bleeding. The muscles and fascia having been divided, the peritoneum is opened, and the *caput coli* found immediately beneath by the exploring finger. Kocher has called attention to the fact that a branch of the iliohypogastric nerve, which enters the sheath of the rectus, is divided by this incision. Atrophy of that part of the muscle supplied by this nerve has been observed after the operation. This incision furnishes good access to the parts involved; and when made and sutured under the protection of thorough asepsis, with proper management afterward, restores the integrity of the abdominal wall. In my early operations performed in this way, comprising a series of twenty-seven cases, mostly in the suppurative stage of the disease, the results were quite satisfactory. So far as I am aware, not one hernia occurred in the entire series.

The vertical incision does not, however, give as easy access to the appendix and to the outer and posterior areas adjacent thereto (which are so frequently involved) as does the oblique incision. The latter is preferable also for drainage, and affords an additional advantage by diminishing the danger of breaking through the inner wall when an abscess-cavity has formed about the appendix. This incision

is made parallel with Poupart's ligament and traverses the line from the anterior superior iliac spine to the umbilicus well over to the right side. It enables the operator to explore the right iliac fossa from the external boundary, thus giving protection to the general peritoneum which may already have been shut off by protecting adhesions. In my recent work I have operated altogether through this oblique incision.

A method of dividing the abdominal wall by a combination of incision and blunt dissection has been described by McBurney and commended by many writers on the surgery of the appendix. This is an oblique incision, in which, after dividing the skin and superficial fascia, the fibers of the parietal muscles are separated by a blunt instrument and held apart with retractors while the peritoneum is divided and the appendix removed. This incision is only applicable to non-suppurative cases, according to its author, though some operators claim to have advantageously extended its application to those in which suppuration has taken place. The theory of this incision, of course, is that by tearing apart the bundles of fibers of the abdominal muscles, instead of dividing them by incision, the natural crossing of fibers in the muscular structure of the abdominal parietes is preserved, thereby preventing hernia as a post-operative sequel. These refinements are not practicable in cases of perforative appendicitis in which the life of the patient depends upon thoroughness of operation and free drainage. Moreover, it is doubtful if separating muscular structures with a blunt instrument yields any advantage over the division of those structures by incision, provided all proper care is bestowed upon closure and retention of divided parts by suturing. In grave cases of appendicitis, in which the patient's life hangs trembling in the balance, the incision should be made with a view to gaining access to the parts with sufficient working space and free drainage, other considerations being secondary.

In cases of recurrent appendicitis, in all cases in which there is no pus outside the appendix, and in all cases in which the requirements are properly met by a single drain, the utmost care should be bestowed upon the suturing of the incision. In these cases I have used the through-and-through suture with silk-worm gut, together with immediate suture of divided muscle and aponeurosis with interrupted sutures of catgut. In these non-suppurative cases the silkworm-gut sutures should be allowed to remain for ten or twelve days. In suppurating cases, when extensive gauze packing and drainage prevent immediate closure of the incision, one angle of the wound should be brought together as far toward the middle of the

incision as practicable, and the remaining sutures of silkworm gut left untied until they may be utilized. The latter are the cases in which hernia is so often a sequel to operation and I do not see that any method of suture can overcome this danger. They are really cases in which the open treatment is an absolute necessity. Patients treated in this manner should be required to remain in bed much longer than is customary, until organization and consolidation of the new tissue formation uniting the incised parieties are complete. This will do more toward the prevention of hernia in this class of cases than any particular method of incision or partial closure of the same.

Adhesions and Abscesses.—In dealing with adhesions and abscesses the same general rules of surgical treatment should be observed in appendicitis as in similar conditions affecting other organs enclosed within the peritoneum. Whenever practicable, adhesions should be separated, abscesses emptied, disintegrated structures composing foci of infection removed, and cleansing and drainage secured by measures of assured efficiency. It is an established procedure in pelvic surgery to incise and drain accumulations of pus in exhausted subjects as an operation of expediency, looking to improved conditions for radical operation and permanent cure. In a limited proportion of cases, Nature completes the cure after such an incomplete operation. The same methods and similar results obtain in the treatment of appendicitis. The function of surgery is to save life; the attainment of ideals should be altogether subordinate to this supreme indication of all surgical operations. This axiom is eminently applicable to the disease under consideration, and, at the same time, we must concede that incomplete operations do not, as a rule, beget cures. In all operations for appendicitis, in all stages and varieties of the disease, the appendix should be removed whenever the patient's condition will permit completion of the operation. I am aware that many excellent surgeons endorse and pursue the practice of evacuating an appendicular abscess-cavity, affording drainage, and partially closing the incision without any attempt to remove the appendix and close the cecum at the point of sloughing. Though this may be the better practice for the occasional operator, it is far from safe to leave within the abdomen a perforated and sloughing appendix. While a certain proportion of these patients recover under an incomplete operation, the aggregate of results, including cases of fecal fistulæ and secondary operations, is not equal to that of completed operations. This conviction has not been formed from theory or by analogy. I have opened appendicular abscesses which

have burrowed along the intermuscular planes to a point in the lumbar region, and other remote points and in numerous instances the patients have recovered after protracted convalescence. On the other hand, I can cite numerous instances in which this procedure has failed. Four years ago I operated on a young woman, aged twenty-four, with suppurative appendicitis. Her condition was critical when first seen and operation was promptly performed. On opening the peritoneum through the usual incision and introducing the finger, pus poured from the wound. The insertion of a drain completed the operation. Convalescence was imperfect and ten days later the pulse, temperature, and general symptoms gave unmistakable evidence of continued suppuration. A second operation was performed and an abscess posterior to the cecum evacuated. The abscess-cavity was irrigated and deep drainage established. The patient made an incomplete recovery and suffered another attack three months later, when I again operated and removed the inflamed stump of an appendix. Recovery was prompt and the cure complete. Much suffering and no small risk to life would have been avoided had it been practicable to complete the operation with safety the first time. I do not mean to question the wisdom of refraining from searching for accumulations of pus by separating adhesions, from searching for the appendix, and from completion of all details when the patient is too feeble to bear such an operation. But when it is practicable to do so, I am sure the patient's welfare is best subserved by a complete operation.

In some cases of appendicitis, known as the fulminant type of the disease, the progress is so rapid that no confining wall of lymph is formed. In such cases the peritoneum is filled with serous effusion mingled with flakes of lymph, and general septic symptoms proceed with great rapidity. A perforated and gangrenous appendix will be found. Thorough irrigation of the peritoneum far and near, with drainage, constitutes the essential parts of the operative procedure.

The most common abscess location, in my experience, is posterior to the cecum. The exploring finger, passed down beside the external surface of the cecum, will enter the abscess-cavity. Less frequently the abscess will be found anteriorly. The omentum, cecum, and coils of intestine, with the parietal peritoneum compose the confining area. The appendix will be readily found in the abscess-cavity. Again, the pus may be confined by adhesions within the pelvis. These are the cases in which fluctuation may be detected by rectal palpation.

In these several locations the general peritoneum, preparatory to evacuation, should be isolated by

careful packing of gauze. When the abscess is post-cecal, long strips of gauze should be carefully tucked in position before carrying the exploration to evacuation of the abscess. There are three directions for gauze packing under these circumstances—in the pelvis, toward the median line, and toward the lumbar region. As the pus is evacuated, the patient is turned toward the right side and the pus carefully wiped away with loose gauze pads. The cleansing should be completed by thorough irrigation with warm salt solution, using for this purpose a small glass nozzle attached to the irrigator. Careful and gentle exploration should be made for additional accumulations of pus. When the abscess formation is localized in the other regions indicated, the same methods of evacuating and cleansing, with proper protection of the outlying peritoneum by gauze, must be observed. My experience compels me to look to thorough irrigation as the most potent of all our resources in this all-important part of the operative procedure. I place no reliance upon the use of peroxid of hydrogen, iodoform, or other chemic germicides here, but believe mechanical cleansing by washing, with the accompanying attenuation, will do more to arrest septic processes and save the patient than all other agencies combined.

Removal of the Appendix.—The cecum appears in several types in the adult, four distinct typical forms being described by anatomists generally. The appendix in man is the cecum of some lower animals in an undeveloped state. In the early period of fetal life the cecum with its vermiform appendix is near the umbilicus and descends into the right iliac fossa about the sixth month. Abnormal positions of the appendix, such as to the left of the median line and other similar displacements, are due to failure of descent of the cecum. The average length of the human appendix is about three and one-half inches, but it may vary from one to nine inches. While the cecum may in exceptional cases be only partially invested by the peritoneum, as a rule it is entirely covered by peritoneum and hence free and mobile in the abdominal cavity. The triangular folds of peritoneum forming the meso-appendix are reflected from the ileum to the appendix. The artery, vein, and lymphatics which supply the organ pass between the two layers of the meso-appendix. This process of the peritoneum varies in length and thickness, and also in the extent of its infolding of the appendix. The mobility of the appendix depends upon the length and breadth of the meso-appendix, and hence has a varying range of movement in various subjects within physiologic limitations. In the female there is a prolongation of the meso-appendix extending to the right ovary, which conveys an additional vascu-

lar supply to the appendix and which has been called the appendiculo-ovarian ligament. To this additional blood-supply has been attributed an increased vitality, rendering women less disposed to appendicitis than men. The appendiculo-ovarian ligament may also facilitate the extension of inflammatory processes between the appendix and ovary, which I have frequently found to obtain.

From this cursory recital of some of the important anatomic relations of the cecum and its appendix, it is apparent that the latter is normally endowed with an extensive and varying range of mobility. It would be more accurate to say of the appendix that it may normally occupy various positions and possess varying degrees of mobility in these several locations. It has been attempted by Bristow, Fowler, and others, to make a definite numerical classification of the normal positions of the appendix. Such refinement of description is of doubtful value as a working basis under pathologic conditions. Normally it is about the *caput coli*, often found toward the median line, below the pelvic brim, alongside the cecum externally, and even underneath the cecum.

When fixed by adhesions and surrounded with inflammatory deposits, agglutinating adjacent serous surfaces, it becomes a difficult task to find and isolate the appendix. In many instances of suppurative appendicitis, that organ will have died, appearing in the abscess as a black slough. In other instances it will have been disintegrated by the destructive process and only a stump will be found to mark its site. The corrosive process of suppuration will, in some cases, erode in spots the structures of the cecum; in more than one such case I have found it necessary to pare away the rotten tissues and suture the openings in the gut.

When the incision has been completed through the peritoneum, the cecum and appendix should be brought up through the wound. In non-suppurative cases, by following familiar anatomic guides, the exploring finger will usually detect the appendix before bringing forward the cecum. In suppurative cases the greatest difficulties will be encountered. The anatomic and pathologic facts already given, together with the careful guide of an educated touch, must be utilized to discover and deliver the organs. When the appendix is in hand, the cecum should be returned into the abdomen, and gauze wrung out in hot water placed around it. In my early operations I ligated the appendix with the meso-appendix, using fine sterilized silk, cut away the appendix, and applied pure carbolic acid to the stump. Later, I adopted the modern method of transfixing the meso-appendix at its base, cutting it away, stripping back a cuff of peritoneum from the appendix down to its

junction with the cecum, ligating the appendix with fine silk and cutting it away, afterward sterilizing the stump, invaginating the stump into the cecum, and covering it with peritoneum by careful stitching after the Lembert method. Nothing in the progress of healing or in ultimate results indicated any advantage of the latter method over the former simple ligature, excision, and cauterization. Careful study of the method of invagination from time to time persuaded me that its advantages were more theoretic than practical. Indeed, if carefully studied with the parts in sight, it will be seen that the invagination is only into the coats of the cecum. An infected ligature would more readily find its way into the peritoneum than into the lumen of the gut. More recently I have adopted a method of treating the stump, which, after I had applied it for some time, I found had been published by Dawbarn. It consists in passing an interrupted suture of fine silk in a circular manner around the stump, catching up the peritoneum and bringing it over the stump as with a purse-string. I deem this preferable to the method of invagination. The silk used for ligature of the appendix and meso-appendix, and for suturing, should be of the size that will supply requisite strength with the least bulk. In cases of recurrent and relapsing appendicitis, wherein there is no pus outside the appendix, this part of the operation can be most satisfactorily completed; in suppurative cases there must be thorough cleansing, and the ligature and sutures must be placed in tissues of good vitality if we would avoid the troubles of infected ligature and a sinus afterward.

In cases in which the appendix is necrotic, it is not sufficient to leave the stump to separate under the protection of drainage, *provided the patient's condition will permit prolongation of the operation sufficiently* for proper closure of the point of separation. In these cases the necrotic process extends to the coats of the cecum and fecal fistula is a common sequel. While such a fistula will usually heal spontaneously, it does not always do so, and, when practicable, this complication should be averted by excision and suture of the gut. In these cases the dead tissue about the stump should be trimmed away with scissors and the opening thus made closed with two rows of fine silk sutures. When the patient's condition is extremely bad from progressive sepsis, the operation should not embrace these detailed attentions to the stump; but there is a certain proportion of suppurative cases wherein with rapid (not hasty) work such completed operative work may be most advantageously applied.

In all suppurative cases the clean peritoneum must be protected by gauze during the manipulations upon

the appendix and its stump, both from the foul appendix and the bed in which it lay. Throughout the entire operation the highest skill of the operator will be brought to bear upon the protection of the outlying area of peritoneum from infection.

Drainage and Isolation of the Peritoneum by Gauze.—In no class of intraperitoneal operations does drainage perform more essential functions than in operations for suppurative appendicitis. In cases of recurrent appendicitis operated upon in the interval of course drainage will not be required. That class of cases, also, in which suppuration is confined within the coats of the appendix, permitting accurate sterilization and infolding of the stump, will not need drainage. But in the cases in which perforation and suppuration have obtained, either with or without a limiting wall of exudate, drainage will be a most essential part of the operative technic.

The right iliac fossa is not the most dependent pouch of the peritoneum and hence glass tubular drainage supplemented by suction cannot be applied as in pelvic surgery. Here we must rely upon tubular drainage with rubber and capillary drainage with gauze. Rubber tubing of firm material which will bear considerable compression without closure should be selected; and sterilized gauze, untreated by any chemicals, is best adapted to this purpose. Gauze which has been iodoformized drains very inefficiently, its capillarity being impaired by the filling of its meshes with the chemic agent.

The extent of drainage must necessarily vary within wide limits. In certain cases only a small strip of gauze passed down to the bed formerly occupied by the infected appendix to prevent too quick closure of the parietal incision may be all that is required. In cases in which no adhesions had been formed between anterior peritoneum, omentum, and visceral peritoneum beneath, strips of gauze must be placed in different directions so as to assure drainage of the general peritoneum. These strips should be placed endwise, especial care being given to drainage from the direction of the deep pelvis, the spleen, and region beneath the liver. The ends must, of course, be brought out of the most dependent angle of the incision. This drainage had best be supplemented by a rubber tube passed down to the area immediately about the *caput coli* where the focus of infection was localized.

After removal of the appendix, and cleansing of the peritoneum, strips of gauze should be placed for the double purpose of drainage and forming a wall between the infected area and the general peritoneum. Within twenty-four hours the meshes of the gauze will be filled with lymph, forming a protecting wall. This is a most important function of gauze

and is utilized with greater advantage here than in any other class of operations. The gauze should not be removed before the third day, and then one strip at a time, beginning with the central piece and preserving the outlying barriers, until the fourth day. After the general peritoneum is securely shut off it is only necessary to maintain drainage down to the focal area about the head of the cecum. Should discharge therefrom appear at this time, the drainage-track should be frequently washed out. Fecal fistula will require constant care to cleanse and protect the wound. A fecal fistula which otherwise would heal may be kept open indefinitely by persistent efforts at drainage. Throughout the period of drainage the patient should remain in bed and union of the incised parietes should be facilitated by adhesive straps and bandages, with constant recognition of the possibility of the occurrence of hernia.

THE TREATMENT OF FORTY-THREE CASES OF DIPHTHERIA WITH ANTITOXIN.

By IRA D. PAYNE, M.D.,
OF LINDEN, IOWA.

HAVING read with interest the reports in THE MEDICAL NEWS of the treatment of diphtheria with antitoxin, I wish to add the results of its use in forty-three cases of the disease which have been treated by me since February 19, 1896. The report by Dr. Biggs of New York of more than 1200 cases of diphtheria, treated by means of serotherapeutics, might not be conclusive to one inexperienced in the use of the serum, but to one who has used it the tabulated cases are of marked interest.

I treated my first case with antitoxin February 19, 1896. The patient was a baby nine months old who had been sick four days with what the parents termed a very bad cold. Examination revealed a membranous deposit in the larynx with indications of an invasion of the trachea. Temperature 100° F., pulse 140, respirations very labored and slow, with marked cyanosis. The baby had not nursed for twenty-four hours. I injected under the skin over the abdomen 1000 (10 c.c.) units of antitoxin prepared recently by Dr. Walter L. Biering of the Medical Department of the State University of Iowa. I gave internally $\frac{1}{30}$ of a grain of bichlorid of mercury every three hours. After twenty hours I again visited my patient. Examination revealed a membranous deposit in the pharynx, and in each tonsil. Temperature 100 $\frac{1}{4}$ ° F., pulse 140, breathing still labored, patient cyanotic, had not taken any nourishment since my previous visit. I injected another 1000 units of antitoxin, continued the bichlorid of mercury as before, and made an application every hour of per-

manganate of potash, 10 grains to 1 ounce of distilled water, to the membrane.

February 24th, I found marked improvement. Temperature 99° F., pulse 140, breathing quite normal, no cyanosis. Baby had taken nourishment five times. I now made one more injection of 500 units, after which the patient had an uninterrupted convalescence.

On my second visit I removed from one of the tonsils a small section of membrane and subjected the same to a microscopic examination at the Medical Department, State University of Iowa, which confirmed the diagnosis. Following this case I treated five other patients with antitoxin, all of whom made a good recovery. In no case has more than three injections of antitoxin been necessary, and while my notes do not show the number, I feel quite sure that two-thirds of the patients required but one injection of 1000 units.

Five of the forty-three cases treated were of well-defined diphtheritic croup, all of which would probably have proved fatal under other treatment. About one-fourth of these cases I treated with antitoxin only, and could not see but that convalescence followed as early and as rapidly as when other remedies were used in conjunction with it.

The initial dose I have employed has in no case been less than 1000 units, and in one case, a little girl three years old, the initial dose was 2000 units, followed after eighteen hours by 1000 units more, with a favorable result. I have used for immunizing purposes about 150 injections of antitoxin from the following laboratories: Behring's of Germany, Mulford's of Philadelphia, and Biering's of the State University of Iowa. About one-half came from Mulford's laboratory. In no case have I seen any bad results follow, other than a slight urticaria, and only five cases of this, four of which followed the use of antitoxin which had been prepared ten months before.

My experience has led me to believe that the fresher the preparation of antitoxin the more rapid the effect. The mistake usually made in the treatment of many cases of diphtheria is in the use of too small a quantity of antitoxin for the initial dose. In any malignant form of the disease I would deem it rational treatment to use, with patients from two to ten years old, anywhere from 2000 to 4000 units as the initial dose; to be repeated in fifteen hours if symptoms indicated it. In cases of diphtheritic croup, when death seems imminent, I believe it advisable to first use antitoxin, and then intubate or perform tracheotomy.

We are warranted in the statement that what would be a mild form of diphtheria elsewhere, in the larynx and trachea would probably prove fatal.

Hence I can see the good results from tracheotomy or intubation in such a case, and by so doing save the life of the child.

Forty-two of the forty-three patients treated by me recovered. The fatal case was that of a child two years old, sick three days with diphtheritic croup. When first visited, 1000 units of antitoxin was injected; twenty hours later the child died.

Through the kindness of Drs. Noel and Thornburg of Redfield, Iowa, I was permitted to visit in February, 1896, five cases of diphtheria, all of which proved fatal. They had treated seventeen cases of diphtheria without antitoxin and eleven of the patients had died. With this record before them they commenced the use of antitoxin, and have treated since February, 1896, until the present time, about thirty-five cases with no deaths. The letter of Dr. S. E. Blaisdell of Brooklyn, N. Y., to Dr. Joseph E. Winters of New York, in which he states he has used antitoxin in thirty-one cases of diphtheria, and has yet to see a single case, either mild or severe, benefited by it, is an experience widely different from the results we have had following its use. While slow to believe in specific medication, we are forced to admit that in antitoxin properly prepared and rightly handled, we have as near a specific for the treatment of diphtheria as we have in quinin for malaria.

AMAUROSIS FOLLOWING INTRANASAL OPERATION, WITH A REVIEW OF SOME OF THE UNCOMMON RESULTS OF OPERATIONS WITHIN THE NOSE.

BY FRANCIS R. PACKARD, M.D.,
OF PHILADELPHIA.

A MAN, thirty-six years of age, came under my care for a hypertrophic rhinitis of very severe type. He had been treated by several specialists for the nose and throat, and had undergone many minor operations during the past few years. The hypertrophic tissue had been treated by galvanocautery, caustics, and by the cold-wire snare.

During February of this year I used the cold-wire snare (under cocain anesthesia) to remove a small piece of hypertrophied tissue from the anterior extremity of the middle turbinate bone of the left side. Two days later the patient returned and informed me that on the day following the operation he had, while writing, suddenly become blind in the left eye. He had gone at once to the office of a well-known oculist, and while waiting there had found that his vision was beginning to return. Before the doctor had finished his examination it was almost completely restored. The period of complete left-sided blindness was stated by the patient to have been between

twenty and thirty minutes. The oculist has informed me that careful examination failed to reveal a cause for the disturbance of vision. When I saw the patient the site of operation presented a perfectly normal appearance. Since that time I have frequently used the cold-wire snare in the further treatment of the patient, and have also employed chromic acid for cauterization, but no further unusual circumstances have attended the case.

The first to direct the attention of the profession to the occasional evil consequences of minor intranasal operations was Ziem.¹ He reported two cases of violent delirium following the application of the galvanocautery to hypertrophic nasal mucous membrane, and one case in which delirium occurred after the evacuation of an abscess of the antrum of Highmore. His fourth case was that of a woman who, on the day subsequent to galvanocauterization of hypertrophied tissue over the posterior extremity of the lower turbinate bone, was suddenly stricken with dimness of vision on the corresponding side. Ophthalmoscopic examination revealed hyperemia of the optic papilla with very marked venous pulsation. He also reported the case of a woman, twenty-five years of age, of very nervous temperament, who, for one week following the application of the galvanocautery to the anterior extremity of the left lower turbinate bone, suffered from diminution of the field of vision of the left eye, accompanied by considerable hyperemia of the eyeground. In Ziem's last case, that of a woman twenty-four years of age, marked congestion and venous pulsation of both optic papillæ were noted after similar treatment of the lower turbinate bones on both sides. Later, Ziem² reported three further cases of one-sided dimness of vision following the use of the galvanocautery in the nasal cavity of the same side.

Lermoyez,³ in a very exhaustive article, has classified the casualties or complications which follow intranasal operations as follows:

1. *Of Infectious Origin.*—Diffuse rhinitis, submucous abscess, diphtheria of the wound, conjunctivitis, otitis media, tonsillitis, facial erysipelas, meningitis, arthritis, pyemia, unclassified infections, post-operative scarlatina, awakening of diatheses.

2. *Of Nervous Origin.*—Neuralgias, migrains, syncope and vertigo, visual disturbances, asthma, laryngeal spasm, exophthalmic goiter, general depression.

3. *Of Mechanical Origin.*—Hemorrhage from the nose and permanent redness of the nose.

Lermoyez also considers these casualties severally. In regard to meningitis, he points out that it may be a result either of metastasis or of direct extension of an inflammation of the nasal mucous membrane.

He states it to be invariably fatal. Voltolini⁴ was the first to record this complication as occurring after the removal of nasal polypi. Lermoyez quotes Kraukauer's observation of an acute arthritis of the left elbow consecutive to the removal of a sarcoma from Rosenmüller's fossa. Pyemia, he states, was reported by Schneider⁵ to have followed the removal of a nasal polypus in an epileptic. Under the term "unclassified infections" Lermoyez includes headache, malaise, irritability, pyrexia, and anorexia. As an instance of the "awakening of a diathesis" he cites the well-known case reported by Curtis,⁶ in which a minor intranasal operation caused the outbreak of an attack of gout.

My case, with the cases of Ziem and with some others yet to be mentioned, should, of course, be placed among the visual disturbances under the head of nervous complications. Lermoyez quotes Rosenberg's⁷ report of a very mild galvanocauterization for vasomotor rhinitis which resulted in complete loss of vision, lasting seven minutes. Lemon's⁸ case of exophthalmic goiter following nasal cauterization is the only instance of this character noted by Lermoyez. His one case of permanent reddening of the nose was observed in a woman in whom the condition was induced by galvanocauterization.

Bresgen⁹ has reported a case of necrosis of the nasal bones and diminution of the field of vision consequent to the unskilful use of the galvanocautery. Ophthalmoscopic examination was negative in this instance.

Cheatham¹⁰ has seen two cases in which intranasal cauterization by chromic acid was followed by edema of the lids and conjunctivæ. He remarks that after this treatment patients are more apt to complain of pain in the eyes than in the nose.

Rethi¹¹ has noted persistent sneezing and vertigo as sequels to galvanocauterization, relieved only by excision of the scar-tissue. In another case laryngeal spasm was similarly caused and cured. In two other cases seen by Rethi vertigo and supra-orbital neuralgia following intranasal cauterization persisted in spite of excision of the scar.

Aronsohn¹² tells of the occurrence of asthma subsequent to the removal of a fibrous polypus from the middle turbinate bone. A cure was effected by excision of the scar.

Laurent¹³ had as a patient a man twenty-six years old, suffering from hypertrophic rhinitis. The obstruction to nasal respiration was removed by applications of chromic acid and the galvanocautery, but the man subsequently suffered from asthmatic attacks, attributed by Laurent to the contraction of the scar-tissue upon the terminal fibers of the trigeminus in the nose.

C. H. Knight¹⁴ reports the case of a girl nine years old, in poor physical condition, from whose nasopharynx adenoids were removed by the curette, under ether. Twenty hours after the operation she developed well-marked torticollis, accompanied by a mild febrile condition. Examination of the nasopharynx forty-eight hours after operation showed the wound to have a sloughing surface, with swollen and angry-looking margins. The child, however, improved rapidly, and in ten days the rigidity of the neck and all traces of the operation had disappeared. Knight attributed the torticollis to reflex irritation.

Max Thorner¹⁵ records a case much resembling my own in some of its details, in a man forty years of age. Numerous polypi had been removed from his nose by means of the cold-wire snare, and to the few which still remained between the middle and lower turbinate bones on the right side Thorner applied the galvanocautery. On one occasion the right eye became affected on the day following such a cauterization; the patient was conscious of light, but could not count fingers at five feet. Ophthalmoscopic examination was negative. Vision improved after five days, and was entirely restored within four or five weeks. Thorner also reports the development of a curious mental condition, with loss of memory, in a boy from whose middle turbinate bone some hypertrophied tissue had been removed. He recovered completely in a few months, and his subsequent treatment was uneventful. In another instance the removal by snare of an hypertrophy from the anterior end of the left middle turbinate bone produced an intense neuralgia of the left side of the face, lasting several days, and a severe spasmodic cough, which persisted for two weeks.

J. F. Ingalls¹⁶ concludes, from a large number of interesting statistics, that intranasal galvanocauterization is almost free from ill results if due care be observed by the operator in the manipulation of his instruments and in the details of his antisepsis. Inflammation of the Eustachian tubes and middle ear he attributes to a burn of the orifice of the tube, to the excessive inflammatory reaction of an over-large wound, or to a lack of antiseptic precautions. Ingalls has never known tonsillitis to result from intranasal cauterization. In 4 cases out of 2600 the procedure was followed by an erysipelatous eruption on the face. He has records of 1900 cases of hypertrophic rhinitis, with 2800 cauterizations, none of which had a complication of any consequence.

In conclusion, I would briefly call attention to the anatomic relation between the parts concerned in these intranasal operations and their sequelæ. The arterial supply of the nose is derived chiefly from branches of the ophthalmic and internal maxillary

arteries, which form a mesh beneath the mucous membrane. Some of the veins from the nose empty into the ophthalmic vein, others into the facial vein, and some terminate in the veins within the cranium. For the nerve-supply there are the olfactory, the nasal branch of the ophthalmic division of the fifth, and numerous filaments from Meckel's ganglion. It is thus readily seen how close is the arterial, venous, and nervous connection between the eyes and the nasal fossæ, direct communication being afforded in addition by means of the nasal duct.

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CLINICAL MEMORANDA.

SARCOMA OF THE KIDNEY—ABDOMINAL NEPHRECTOMY—RECURRENCE AFTER FIVE MONTHS—DEATH IN ONE YEAR.

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E. Z., female, aged five years, was referred to me by Dr. J. S. Brown of Montclair, N. J. The general health of the child had been good up to about four months before I saw her, when her mother first noticed an enlargement of the abdomen. This had steadily increased until her health became seriously affected, and as the condition was looked upon as inoperable, it was hoped that inoculation of erysipelas toxins would prove of benefit.

I found upon examination that the abdomen was nearly filled by a firmly fixed, hard tumor, that apparently had its origin in the region of the left kidney, and which extended beyond the median line and down into the pelvis. A diagnosis of sarcoma of the kidney was made, and, as it seemed possible to remove the growth, with the assistance of Dr. B. Farquhar Curtis, I operated on September 25, 1894.

An incision four inches long was made parallel with the outer border of the rectus muscle, and from the center of this a transverse incision was made, extending about three inches to the left. The tumor was found to be adherent to the overlying colon, but was shelled out with but little

difficulty. Only a very small quantity of blood was lost, and the shock was slight. The pedicle, not more than three-eighths of an inch in diameter, was found and ligated with silk, the peritoneum closed, and a gauze drain introduced which passed down to the stump, but outside of the peritoneum. With the exception of a sinus which persisted for two or three months, the wound healed promptly and satisfactorily. The patient gained rapidly in flesh and strength, and was presented before the New York Surgical Society on November 14, 1894. The weight of the tumor was three pounds. Microscopic examination by Dr. H. T. Brooks, pathologist to the Post-Graduate Hospital, showed the tumor to be a mixed-cell sarcoma, with spindle-cells predominating.

The patient continued in perfect health until the early part of May, 1895, when a small tumor was detected, apparently originating in the retroperitoneal glands near

FIG. 1.



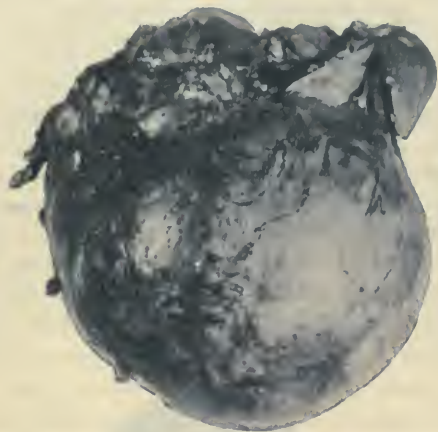
Sarcoma of the kidney in a child five years of age.

the site formerly occupied by the kidney. The tumor increased very rapidly in size. The quantity of urine passed by the patient was much diminished, was of high color, and contained some albumin and blood. She was put upon small doses of the filtered toxins of erysipelas and bacillus prodigiosus, which were injected every other day into the gluteal region. Her general health quickly began to improve, and her urine increased in quantity and became nearly normal. The injections were continued during May, June, and July, 1895, but not in sufficient doses to produce a chill. Treatment had to be carried out at my office, hence only small doses could be given.

In August there was a well-marked increase in the size of the tumor, and the health of the patient again became

impaired. The use of the toxins was discontinued. The growth of the tumor was enormously rapid, and by the latter part of September the abdomen was filled by it. Emaciation was progressive and rapid, and the patient

FIG. 2.



Spindle- and round-celled sarcoma of the kidney. Weight, 1400 grams.

died in the middle of October, 1895. The accompanying illustration shows the condition of the tumor prior to operation.

Sarcoma of the kidney has long been regarded, and rightly so, as very nearly a hopeless condition; hence, much difference of opinion is entertained by surgeons as to the advisability of subjecting such patients to an operation. The brilliant results reported by Dr. Abbe before the New York Surgical Society (two of his cases having remained well for more than three years) are certainly most encouraging. However, the fact that Dr. Abbe's experience has been so different from that of most other surgeons, together with the circumstance that one of his patients has had a recurrence of the disease more than four years after operation, force us to conclude that, in spite of improved methods, we must still give a very grave prognosis in cases of sarcoma of the kidney.

Lotheisen, in his admirable article on "Surgery of the Kidney,"¹ states that, of eleven patients operated upon for malignant tumor of the kidney, only one was well beyond two years, and the growth was an adenocarcinoma. Of the five cases of sarcoma, all the patients died of recurrence.

THE DIURETIC ACTION OF MERCURY IN CARDIAC DROPSY.²

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RECENT authorities universally agree that dropsical accumulations arising from obstruction to the circulation from valvular disease are best treated with cardiac tonics and stimulants, and that chief among these remedies are digitalis, strophanthus, diuretin, and caffeine. Most writers assert that digitalis acts best after a calomel purge. I

have frequently seen digitalis and iron fail utterly until the patient was thoroughly purged with a mercurial, after which the former remedy could be resumed with benefit.

The following cases in the writer's practice will illustrate not only the diuretic action of mercury, but also the disadvantages attending its continuous use:

During 1893 and 1894, Mrs. W. had been troubled with palpitation and irregular action of the heart, and marked dyspnea upon slight exertion. Failure of compensation, however, did not set in until the fall of 1895. A careful examination at this time revealed a moderately enlarged heart, acting feebly and irregularly. A mitral presystolic murmur could be heard near the apex, and serious pulmonary complications were also present. The abdomen contained a moderate amount of fluid, and the lower extremities were dropsical. The stomach was very irritable, and the digitalis and caffeine which she took was more often vomited than retained. The heart was acting so feebly and irregularly that strychnin was given hypodermically thrice daily for several days, but the attacks of dyspnea and cyanosis persisted.

These distressing symptoms were partially relieved by hypodermic injections of morphin and atrophin. The cardiac stimulant was discontinued, and three grains of calomel with soda was given thrice daily. Its purgative action was quite pronounced, and the effect seemed beneficial. Opium was often prescribed with the calomel in order to control the looseness of the bowels. After a few days it was noticed that the amount of urine was greatly increased, and twice when measured it was found to be more than eighty ounces per day. At the expiration of ten days of the treatment all of her symptoms had improved. The dropsy was rapidly decreasing, the pulse was more regular, and the breathing more natural. At this time, however, the calomel began to affect her gums, and she refused positively to continue its use. Her condition gradually became worse in spite of tonics and diuretic remedies, and several months later she succumbed to the disease. The diuretic action of calomel in this case was marked, and it was more efficient in this respect than were the remedies which were subsequently employed.

The next case was one of cirrhosis of the liver, with marked ascites. As Palma³ had reported the diuretic action of calomel in this condition I determined to make use of it in this instance. During a week the patient took ten grains of calomel daily. The purgative action was severe; but no diuretic action was noted, and, the gums becoming affected, the treatment was discontinued. He was tapped several times before he died.

Mercury was given Mr. W., a man about sixty years of age. His heart was greatly enlarged. A systolic murmur was heard in the second right interspace, and was traceable over the ascending arch. Palpitation was annoying, and the pulsation of the vessels in the neck was plainly noticeable. Failure of compensation had existed for some time. The abdomen and limbs were extremely dropsical. Breathing was superficial and difficult, and cough and expectoration annoying. The various diuretics he had been taking during several months seemed

¹ *Archiv. f. klin. Chirurgie*, Band 52, S. 721.

² Read before the Dubuque (Iowa) Medical Society, June 30, 1897.

³ Quoted by Pepper, *THE MEDICAL NEWS*, December 15, 1894.

to afford him no relief, and as the accumulation of fluid was increasing, the remedies were discontinued. He was now given 8 grains of calomel daily for four or five days. The remedy acted moderately on the bowels, but produced so much griping pain and distress that the dose was reduced to 3 grains, with soda and jalap, and this was given for several days. There being no perceptible increase in the amount of urine passed this line of treatment was stopped. A few months after this he succumbed to the disease. The use of calomel in this case was a *dernier ressort*, but it produced no benefit.

Mr. B. was seen in consultation. The examination showed enlargement of the heart, with feeble and irregular action. A mitral systolic murmur was heard in the sixth interspace. The abdomen contained fluid, the limbs were dropsical, and a hacking cough was incessant. He was unable to lie down and could sleep for only a few minutes at a time. His condition was so serious that his death was expected at any moment. During four months he had been under treatment, chiefly with digitalis. I saw him in December, 1896, and it was agreed to discontinue the use of digitalis. Sufficient morphin was given hypodermically to secure him several hours sleep. This afforded so much relief that the drug was given nightly for a number of nights. Ten grains of calomel was administered, and this was followed in three hours by a dose of jalap. The action upon the bowels was prompt and beneficial. Six grains of calomel was now given daily. The nightly doses of morphin probably restrained the purgative action of the mercury. He began shortly to pass more urine, and, while it was not measured, it was thought to amount to four or five pints daily. During two weeks he continued to take from four to eight grains of calomel a day. Antiseptic mouth washes were constantly used. The dropsy subsided gradually, his stomach was no longer irritable, and his breathing became freer and easier. He was soon able to be up and about, and, I believe, is still living.

This report has been condensed as much as possible, and but passing reference has been made to the action of other remedies used before resorting to mercury. Much of the benefit obtained from the use of this drug no doubt arises from unloading the bowels, relieving the engorged and congested condition of the liver, and removing impurities from the system. Nor is this all; it undoubtedly causes diuresis in dropsical patients by causing serum to be reabsorbed and eliminated by the kidneys. Mercury differs from digitalis as a diuretic in the fact that its action in this respect is sooner lost. When the remedy is resumed, however, after having been suspended, it again causes diuresis. Murray states that this remedy acts, not only as an eliminative and alterative, but also upon the heart itself. I have seen nothing to warrant me in accepting this conclusion.

It must be borne in mind in estimating the value of mercury as a diuretic that several disadvantages attend its continuous use. Among these are its pronounced purgative action and the griping pain which it causes, both of which are controlled with difficulty. Even with the most careful management stomatitis will often result,

and, furthermore, the diuretic action is not uniformly produced. Notwithstanding these drawbacks, however, mercury has a place as a diuretic. In most cases in which a diuretic is necessary the use of mercury is not indicated, but in those in which other remedies have been administered during so long a time that they have lost their effect it may be administered, often with benefit.

A CASE OF CHYLOUS ASCITES.

By J. A. DAY, M.D.,
OF WINCHESTER, ILL.

I DESIRE to report a case which is unusual, judging from the limited amount of literature bearing upon the subject. The case in question is one of ascites, the fluid of which I believe to be of a chylous nature.

My attention was attracted to the patient whose case I present about two and one-half years ago, and the following history elicited: Mr. J. H., aged fifty-four years; height, 5 feet 10 inches; weight, 160 pounds; family history, good. His previous health had been excellent until about twelve years before, when he had an attack of what his attending physician termed catarrhal fever, which, as he states, was attended with dull pain in the left hypogastric region, and a feeling of fullness and oppression all over the abdomen. Shortly following this attack he had edema of both lower extremities, penis, and scrotum, which varied in intensity from time to time, and has continued until the present, although his general health has remained good, and he has always led the active life of a farmer until about three years ago, when he was obliged to abandon hard work in consequence of an enormously distended abdomen. He was ignorant of the true nature of his condition, which in reality was caused by a large accumulation of fluid in the abdominal cavity. The attending physician seemed to have overlooked this very distressing condition, which persisted until about the middle of February, 1895, when he consulted another physician in a neighboring town, who made a diagnosis of ascites, and drew several quarts of yellowish-white fluid resembling milk from the abdominal cavity. He had undergone this procedure twice before coming under my observation.

Paracentesis was performed April 6, 1895, by my father and myself, and we removed about three gallons of fluid resembling rich milk, of a specific gravity of 1010, with entire relief to the patient for the time being. After this operation the abdominal walls returned to a normal level. Upon careful examination after paracentesis, we could find no evidence of disease of the heart, liver, spleen, or kidneys, neither was there any tumor to be discovered by means of deep pressure over the abdomen. In about three weeks a subsequent tapping was performed, obtaining about the same quantity of fluid. The patient has undergone this operation on an average of once every three weeks, each time having from two to three gallons of fluid of the same character withdrawn. He has been tapped in all forty-nine times, the aggregate amount of fluid removed from his abdominal cavity being 976 pints.

The fluid is strongly alkaline, odorless, of salty taste, specific gravity ranging from 1008 to 1014, depending

upon the kind of fluid ingested, and diet seems to influence the amount of the accumulation as well as its specific gravity. During the summer when he is indulging in a vegetable diet, the fluid accumulates very rapidly and is of lower specific gravity; and in winter, when diet is mostly of foods rich in fats, the opposite condition obtains. Upon standing this fluid undergoes separation imitating milk, the rich fatty elements coming to the top like cream. Chemic analysis proves it to consist of many of the same elements as chyle, and the microscope shows an abundance of fat globules and granules of different, but minute sizes, in suspension. There are also numbers of crystals of what appears to be salts of the ammoniophosphates. No leucocytes, blood-corpuscles or epithelial cells were to be found.

The patient is at this time in excellent health. His appetite is good, there is no dyspepsia or pain, the bowels are regular, and but for the inconvenience occasioned by the enormous distention of the abdomen, and edema of the lower extremities, which disappears at once on tapping, he is apparently well.

I have used an ordinary trocar and cannula for this operation, and have always observed the strictest anti-septic precautions; as a consequence, he has never suffered the least inconvenience from it, the punctures invariably healing rapidly. As to location of the punctures, I have not observed any particular rule, except to avoid tapping above the umbilicus, or in the extreme groin, taking care to see that the bladder is empty.

This case is no doubt of a chylous nature, being of especial interest only on account of its rarity, the long duration of the disease, and the continued good health of the patient. The exact pathologic lesion is obscure and will probably never be revealed short of an autopsy, but the author believes there exists that variety of ascites which is due to an effusion of chyle into the peritoneal cavity, resulting from some obstruction situated in the lymphatic vessels, lymphatic glands, or the thoracic duct. The chyle finds its way into the peritoneal cavity by the rupture of the lymphatic vessels or transudation through them, the nutrition of the body being carried on by anastomosis. In a fairly careful search of literature, I have been able to find only eight recorded cases of chylous ascites.

MEDICAL PROGRESS.

The Question of Allowing a Woman Who Has an Eruptive Fever to Nurse Her Child.—ROGER (*Med. Week*, September 3, 1897), from statistics kept at one of the Isolation Hospitals in Paris, answers the above question in the affirmative. Of quite a large number of new-born infants breast-fed by mothers who suffered at the time from either measles or scarlet fever, none contracted scarlet fever, and only two measles, and in both of them the disease was of a mild type. So that one need not feel any uneasiness in allowing an infant to continue at the breast of the mother who manifests the symptoms of one of these diseases. This immunity is explained by Roger on the supposition that the children are rendered immune to the

disease, by ingesting the toxins or attenuated germs in the milk.

Ultimate Results of Operations for Hernia.—In the *Rev. Med. de la Suisse Rom.*, July 20, 1897, there is a *résumé* by TAILLENS of 324 cases of hernia operated upon in the hospital service of Roux, which affords opportunity for fruitful study, the more so, that only cases which have gone over two years since the operation and which have been personally traced are included in the tables. These herniæ were 288 inguinal, 22 femoral, and 14 umbilical, and the recurrences were respectively 16.7, 27.3, and 0 per cent. Taking the inguinal cases alone the influence of age was most apparent, the recurrences for each decade of life being 5, 10, 15, 25, and 32 per cent., the latter including all cases over forty years of age.

Two methods of operations were employed, *viz.*, that of Bassini fifty-three times, and simple suture of the pillars either in one or two layers; the operation of Ferrari, in 235 cases. Cases operated upon by the former method recurred to the extent of 39 per cent., while following the latter only 12 per cent. relapsed. This is directly opposed to the experience of some American surgeons.

The cases which healed primarily did better than those which healed by granulation, the figures being respectively 15 and 22 per cent. Atrophy of the testicle occurred in 4 per cent. of the Ferrari operations, and in 7 per cent. of the Bassini's. An attempt was made to ascertain the virility of those having double herniæ, but the replies were unsatisfactory partly because many of the men were not married, and also because it could not be definitely shown that they were the fathers of the children attributed to them. The author gained the impression, however, that these men were less fertile than normal.

The Rapid Estimation of Uric Acid in Urine.—BARTLEY (*Brooklyn Med. Jour.*, August, 1897), has devised a method of estimating the amount of uric acid in the urine which may be completed in about half an hour. The solutions required are: (1) A 1-50 silver nitrate solution. (2) A mixture containing 8 grams of crystalized magnesium sulphate and 12 grams of ammonium chlorid in 100 c.c. of aqua ammoniæ (U.S.P.). (3) A solution of ammonium sulphohydrate of such a strength that its color is nearly that of the urine. Fifty cubic centimeters of the urine are poured into a beaker, with 5 c.c. of the magnesium fluid, and the whole is warmed over a water bath to prevent the precipitation of the xanthin bodies by the silver.

The silver solution is run into the warm mixture from a burette. From time to time a drop is removed from the beaker by means of a dropper over whose end a piece of absorbent cotton has been tightly wound, thus acting as a filter. After removal of the cotton the drop of the solution is brought into contact with a drop of the ammonium sulphohydrate solution on a white slab or a piece of glass placed over white paper. If a dark ring is observed at the line of contact of the two fluids, there is an excess of silver nitrate, and when this point is reached no more silver is added. Each cubic centimeter of silver

solution used, precipitates 0.00336 grams of uric acid. This factor multiplied by the number of cubic centimeters used gives the uric acid in the 50 c.c. of urine. To obtain the number of grains in an ounce, multiply this result by 9.12. Fifty cubic centimeters of urine require usually from 6 to 10 c.c. of the silver solution to precipitate all of the acid present; if more than 12 c.c. are required, it is better to dilute the urine with an equal amount of water before taking the final reading. If albumen is present, it must be precipitated by acetic acid and boiling before the uric-acid test is made. If there is a sediment of uric acid or urates this must be dissolved by heat, with or without the addition of sodic hydrate, and diluted with an equal quantity of water before the urine is tested.

The amount of xanthin may be determined by testing one portion of the urine warm and another cold; the difference in amount of the silver solution required in the two instances being that necessary for the precipitation of the xanthin. One cubic centimeter of the silver solution will precipitate 0.00158 grams of xanthin.

On the Occurrence of Nasopharyngeal Adenoids.—ARROWSMITH (*N. Y. Med. Jour.*, August 28, 1897) reports in tabular form 701 cases of nasopharyngeal adenoids observed in 2000 dispensary patients. Contrary to the experience of many Continental observers, in not a single one of these 701 cases was there the slightest evidence on gross inspection of a tuberculous tendency. In twelve consecutive unselected cases, histologic, bacteriologic, and inoculation examinations, were absolutely negative. Of 255 operations, 204 were performed under general anesthesia, which is greatly to be recommended in young subjects as it lessens nervous shock, saves time, and above all else enables the operator to perform his work with a greater thoroughness than is otherwise possible.

Dyspepsia in Children.—MAGNIAUX (*La Presse Médicale*, May 19, 1897), says that dyspepsia is very common in childhood but is frequently overlooked; its victims being treated for anemia, beginning tuberculosis, etc. In consequence, iron, creosote, quinin, and wine, all which are irritants of the mucous membrane of the stomach, are given often with unpleasant results. The author having examined eleven children presenting the symptoms of dyspepsia draws the following conclusions: all were badly nourished during the first years of life; eight were bottle-fed; three were allowed a mixed milk diet; and all were rachitic to a variable degree.

A dyspeptic child may be abnormally thin, or large and fat, the two types representing only two successive stages of dyspepsia. In all of these cases the stomach resonance extended down to, or even below the umbilicus. There was always excessive thirst, and usually loss of appetite, though in two of the children the appetite was abnormally great. Constipation was frequent, often alternating with diarrhea. Nausea, vomiting, and heart-burn, were frequently observed. At times the gastralgia was so marked that it might easily be thought to be due to ulcer of the stomach. Headache and night terrors were common.

Hydrochloric acid was usually found to be in excess, although it was entirely absent in certain cases, and at times it was normal in amount. As a general rule alteration in the gastric juice played a secondary part while muscular atony was the most important feature of the disease.

Treatment was for the most part dietetic. Medicines were prescribed in only four of the eleven cases, and consisted of bicarbonate of soda, powdered nux vomica, and hydrochloric acid. In all cases the treatment employed had but one object, that of permitting the overworked stomach to rest as much as possible. This was accomplished by reducing the number of meals, by establishing their regularity, their character, the fine division of the food, and the regulation of the amount of liquid. The results obtained were very satisfactory.

Bichlorid Catgut Better Than Kangaroo Tendon.—BORDEN (*New York Med. Jour.*, September 18, 1897), as a result of his personal experiments makes the statement that catgut boiled in a 1-to-500 solution of bichlorid of mercury in alcohol over a water bath for one and one-half hours is cheaper, stronger, more regular in size and will last longer in the tissues than kangaroo tendon. In a skin wound sutured partly with kangaroo tendon and partly with heat-sterilized catgut, it was found at the end of five days that some of the sutures of tendon were cut quite through by the leucocytes, while the catgut sutures were all divided by their action. This wound healed aseptically. In another wound which suppurated catgut and tendon, both of which had been steeped in bichlorid solution, were used. At the end of four days a microscopic examination was made, and it was discovered that the action of the leucocytes had penetrated the tendon to its center, while the bichlorid catgut, in this case No. 8, was eaten only half way through. The superiority of the catgut was thus clearly shown.

Borden prepares his catgut in the following manner: Coils of gut are placed in clean Petri dishes, or short strands in long glass tubes the ends of which are stopped with cotton, and kept for three hours in a dry sterilizer which is slowly raised from 100° to 140° C. The gut is then removed with sterilized forceps to a sterilized pint fruit jar, which contains the alcoholic solution of bichlorid of mercury, 1 to 500. In this it is slowly boiled on a water bath for one and one-half hours. It is kept in the bichlorid solution until wanted.

Borden now uses catgut prepared in this way in cases in which he would formerly have trusted only to kangaroo tendon, or, indeed, in which he would have thought the use of silver wire or silkworm gut indispensable. He has had the best of results from its use in hernia, and in appendicitis with suppuration, when it was possible to close the wound only partially, deep sutures of this catgut kept the edges in apposition for a sufficient length of time, and suppuration did not extend to the stitches, as would have been the case if silkworm gut had been employed. The most serviceable sizes are Nos. 1 and 2 for fine sutures and ligatures, and Nos. 8 and 9 when strength is required.

The Country Slaughter-House as a Factor in the Spread of Disease.—In the *Med. and Surg. Reporter*, September 11, 1897, STILES, one of the Zoologists of the United States Department of Agriculture, points out how the country slaughter-house is a factor in the spread of disease. Whether the animals used for food are killed by the farmers or by the butchers in their own slaughter-houses, the offal is almost always fed to hogs. If the slaughter-houses are permanent, they are usually infested by rats, which are frequently eaten by hogs. As a result of these practises, many hogs become infected with trichinæ. Of seventy-two rats taken from slaughter-houses, meat-shops, and packing-houses, fifty-four per cent. were found to have the disease, while of seventy-five rats from barns, feed-stores, etc., only three per cent. were infected. The probabilities are, therefore, if a hog eats a rat at a slaughter-house it will contract trichinosis. It is not to be expected that hogs which eat offal will escape infection any more than will the rats, so it is no cause for surprise that from one to two per cent. of the hogs at large abattoirs are trichinous, for in some localities from one to four per cent. of the hogs are offal fed. The offal of hogs ought never to be fed to these animals. There is no sanitary objection to feeding them the offal of healthy cattle and sheep, but cattle affected with tuberculosis and other diseases may transmit them to hogs, so that the practice ought to be abandoned altogether, and all the offal rendered. If the slaughter-houses were located near together in every locality, instead of being as at present far apart, this could easily be done. As a further precaution the houses should be kept free from rats, by the use of traps, not poison, as this drives them away.

A Supposed Case of Bismuth Poisoning.—MAXSON (*Ann. of Gyn. and Pediat.*, July, 1897) describes an instance of poisoning by bismuth. Fifteen grains of the subnitrate was given every two hours to each of a pair of twins three weeks old, to allay diarrhea. The children became dark-colored, sleepy, and the breath had a garlicky odor. The bismuth passed from the bowels unchanged in color. The administration of the medicine was discontinued and the symptoms of poisoning quickly disappeared. Two weeks later, owing to a recurrence of the diarrhea, one of the children was again given the same preparation of bismuth, and the symptoms again developed.

Some Facts About the Origin of Malaria.—BATTEN (*Four. Amer. Med. Ass'n*, August 14, 1897) denies that the poison of malaria enters the system wholly by way of the stomach, and in support of the theory that an entrance may also be effected through the respiratory tract he mentions his experience on the vessel *Valley City* during 1864-5. The ship was cruising along the coast of North Carolina, and although all the water used on board, either for drinking or cooking purposes, was boiled and filtered, yet the number of cases of malaria invariably increased whenever a long stay was made in any river. Again, in the Western States and in Pennsylvania, malarial fever has actually been ploughed out of existence, those who

first turned the soil suffering the most from its effects. Was it in the food or water of these early settlers that the *plasmodium malariae* was contained, or was it in the air they breathed?

THERAPEUTIC NOTES.

Proper Use of Colchicum in Gout.—SCHULZ (*Med. Week.*, September 3, 1897) believes that the failures in the use of colchicum in gout are due to two causes, *viz.*, the employment of the drug at a period of the disease when it is inefficient, and secondly, to the use of excessive doses. It is especially indicated in cases in which there is pain in the joints, fever, and copious perspiration, quick breathing, and a full pulse. The dose should be small, from 20 to 40 drops daily of a mixture of the tincture of colchicum seeds and alcohol in the proportion of one part to ten.

Acute Pulmonary Affections Treated by Warm Baths.—In the *Centralbl. für Innere Med.*, July 10, 1897, there is an abstract of an article by VERDY on the treatment of acute affections of the lungs by warm baths. The baths should be given at from 36 to 38° C. (97 to 100° F.) and should last during ten minutes, the usual precautions against congestion of the brain being carried out. From two to three baths are given daily according to the necessities of the case. After a bath there is a quiet, restful sleep, while the respiration and pulse become less frequent and more regular, and expectoration is facilitated. Upon awaking, the patient is delighted to find the pain less severe, and in the case of children the playthings are asked for, and the appetite is almost immediately restored. In some cases mustard is added to the baths.

Practical Points in the Treatment of Chancres.—FOURNIER (*La Presse Med.*, July 7, 1897) has an excellent paper upon the treatment of chancres, from which the following practical points are taken: (1) Forbid sexual intercourse. (2) Forbid a stimulating diet. (3) Counsel moderation in exercise. (4) Prescribe frequent warm baths, local and general, and a simple ointment for local application. Irritating substances such as alum, ferric chlorid, carbolic acid, etc., should never be used. Iodoform, though an excellent application, had better be dispensed with on account of its odor. Nitrate of silver is much abused, and should never be used except to stimulate healing in chancres which remain stubbornly covered with a crust; or upon indolent ulcers or exuberant granulations. In these cases the application ought not to be repeated oftener than every five days. If the chancre is at the meatus, the same rules of treatment apply, but they are to be carried out with the greatest pains on account of the tendency to inflammation of a chancre in this situation. If the chancre is situated within the urethra, aside from the local and general baths and the administration of diluents, nothing is to be done, as in such cases the introduction of foreign substances, either fluid or solid, within the urethra, only aggravates the trouble.

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MERCANTILISM VS. MEDICINE.

ABOUT fourteen years ago President White of Cornell University published an article sharply calling the attention of thinking men to the fact that the relations of the business and the professional worlds were rapidly being reversed; that the varied opportunities for making money in different mercantile pursuits in this great commercial nation of ours were draining the brightest minds from the learned professions. He explained the fact by showing how much more wealth could be amassed by the exertion of a certain amount of brain power in a mercantile pursuit than by the exercise of equal brain power in one of the professions.

The church, the bar, and medicine have all equally suffered by this change. And not only have many brilliant minds been drawn away from our profession; more disastrous still, the ease with which a person can become legally qualified to practice medicine in almost all parts of this country has opened the flood-gates of mediocrity and over-supply. Indeed, the mercantile spirit has helped in more ways than one to cause an over-supply of physicians, many of whom are necessarily of ordinary ability. Few cities of

more than 100,000 inhabitants in this country are without a fairly well-equipped medical college, which takes the raw material and, in an incredibly short time, turns out a machine-made product of medium attainment—with exceptions of course—but all of them warranted to wear awhile and compete in the race. The mercantile spirit is at the bottom of this condition. The professors and teachers expect an augmentation of both reputation and practice to accrue from the nature of the position occupied. If the size of the school increases, each receives a gradually increasing salary. Of course some of the instructors, the writer, and a few other sainted ones attend at the free dispensary for glory and love of study; but none the less, every one of the faculty is blindly but laboriously adding complication to complication in the problem which menaces our profession.

This over-supply of men of but average ability has produced the same business conditions that exist in commercial life—that is, the competition which fifty years ago served as a wholesome stimulus has to-day become a deadly struggle. The fight was on in the trading world some years before we felt it keenly in the professional, so that business men are necessarily in advance of us, both in theory and in practice.

The time has been when single-handed effort brought its just and proportionate reward, but the American system of individualism has bred such a ruinous competition that far-seeing men have been driven to combine. A late writer, Otis Kendall Stuart, himself a large manufacturer, demonstrates conclusively that to all thinking men the logical step in business is the foundation of a trust. The man nowadays who attempts to struggle along alone is forced to the wall by a multitude of rivals. The only logical resource is to combine individual strength with that of his competitors—the trust thus formed being to the practical advantage of all concerned, reducing expenses to the lowest possible limit and maintaining profits at the highest. We of the medical profession are now face to face with the question whether we shall not be driven to the same methods in coping with these conditions. We are practically still working upon the system of individualism, with at the same time an indistinct, albeit semi-blind, reaching out after the new methods of the business fraternity. The lodges, the great public hospitals, the dispensaries, and the sharp competition are a quartet

that is steadily and surely forcing down prices to the starvation point. Cannot some practical remedy for this condition be found in the formation of a trust on the part of the profession, a good common-sense working trust or union that shall have some solidarity of purpose and some cohesion among its members?

THE LUETGERT CASE AND EXPERT TESTIMONY.

THE battle royal now on in Chicago, in which the experts for the prosecution assert their scientific belief that every particle of bone found in or about the now famous sausage-vat belonged to a human adult female, bids fair to be enrolled as one of the most monstrous exhibitions of the century. The experts for the defense, no less than their opponents, have thus far demonstrated the utter fallibility of testimony called expert. Indeed, the experts on both sides have made so many contradictory and impertinent statements about bones in general, especially about phalanges, ribs, sesamoids, femurs, and temporals, that the profession, the public, and especially the jurors, are so confused that, if any consideration is to be given to this feature of the evidence, it will result only in uncertainty and doubt.

Furthermore, it will not be surprising if all concerned—judges, lawyers, and jurors—lose all respect for expert testimony. Professor Os Calcis swears that a bone he now holds in his hand is that of a woman, while Professor Trapezium affirms that the same bone belongs to the hog family. How ungallant of you, Professor Trapezium! But never mind, gentlemen, you have illustrated what has been demonstrated over and over again in New York—that it is perfectly absurd to go on hiring so-called experts, as the courts are doing in all cases of a criminal nature. Too long has this sad condition been a reproach and a shameful stigma not only upon the courts of justice, but also upon the medical profession. I will venture to say now that every man of the “twelve good and true” sitting in judgment in this case has concluded that a just verdict can be reached only by entirely eliminating the testimony of the experts. Their verdict will certainly brand the one or the other set of experts as veritable humbugs, for certainly those for the defense have thus far contradicted every point depended upon by the State for a conviction.

Astounding as the expert testimony has been in this case, it is only equaled by the brazenness of the opposing counsels. The medical witness must answer “yes” or “no” or be ridiculed beyond the limit of toleration. Pleading lawyers and cross-examiners never respect a medical witness; confusion worse confounded in a few moments takes the place of the direct and forceful statements the medical witness wishes to make. The expert may be perfectly correct in saying that a given bone is a human femur, but before the opposing counsel gets through with him he is unable to swear to the identity of his own nose. He is simply to be confused, in order the more certainly to confuse the jury.

These astonishing exhibitions in courts of justice will but hasten the day when a decided revolution shall be inaugurated in the method of selection of medical experts and the giving of medical expert testimony. Certainly such a witness is justly made light of in many cases; he is amusing at times, but he winks the other eye, for he has a fee.

Appalling as all the contradictory testimony has been in this case, one fact will stand after all else has vanished, and that is, sufficient experiments in the boiling of bodies have been made to suffice for all time. The State boils a body and finds that it entirely dissolves in a certain specified time; the defense boils two to their one, with entirely opposite results. A human body, male or female, thrown into a vat before life is extinct, and subjected to prolonged boiling in a caustic solution takes on changes more or less rapidly in proportion to the strength of the caustic and the temperature of the solution. The experts in this case have agreed, disagreed, and even flatly contradicted their brethren of the same side on the above points.

The scientific mind of the anatomist has been placed in a peculiar position. The gray matter of his left hemisphere must be having a terrible time trying to convince the gray matter of his right hemisphere that a contemptible sesamoid bone has been the initial cause of the femur of a dog refusing to be recognized as the femur of a female adult. The osteologist is certain, when upon the witness-stand, that the femur he holds in his hand, the largest and strongest of the bones, is that of a human; you cannot fool him. He goes still further; he testifies that it at one time formed part of the bony frame-

work of a female human. Not satisfied with this, thinking he has routed the prosecuting attorney, he is confident that that particular female human who owned that femur in life was five feet four inches in height. He arrives at this latter conclusion by the length of the femur. Oh, God of mathematics, you have been made sponsor of a most egregious piece of logic! The expert steps down, smiles with satisfaction to himself until rebuttal testimony brings out positive proof that the aforesaid femur belonged to the bony framework of a gorilla, six feet six inches in height.

Even the poor little rib has been used in this case to puzzle court and jury. Not since the exsection of a rib from Adam in the Garden of Eden has it played so important a part as when flaunted in the court-room last week. I am not aware which rib was found, but the peculiarities of the first, second, tenth, eleventh, and twelfth ribs would not help the case in any manner. As if the case of the State had no leg to stand on, the prosecuting attorney promptly supplies a phalanx or two.

Weak spots have shown themselves in the case for the State. For instance, no testimony has been adduced to show that any one piece of bone fitted any other fragment. Corresponding bones would go far to prove whether the pieces belonged to one body or not, human or animal. Two femora, two temporals, several ribs, or a few inches of the spinal column would assist to clinch the case. To determine age from bones is almost impossible; the long bones and those especially, past the period of ossification would help in this direction. In any event, positive opinions must be guarded. Stature may be approximately stated by measurement of a long bone, but to state positively the probable nature and connection of an isolated bone is absurd.

The question of identification naturally arises, the defendant claiming that his wife left home; the State contends that the finding of finger-rings and bones in and about the vat points to the fact that the defendant's wife was placed therein and destroyed. Admitting this, there is not a particle of evidence to prove in what manner the wife of the defendant came to her death. It certainly is not a capital offence to place a dead body in a vat and destroy it. Whether the body in this case, admitting that a human adult female body was placed in the vat,

found its way therein before or after life was extinct is a question which cannot be solved by chemic or pathologic research; circumstantial evidence alone can decide this contention in the case.

The lessons derived from the Luetgert case point to a revolution in the methods of selecting and giving expert medical evidence. The medical profession should rise and demand the change before the ridicule heaped upon medical men brands them, when on the witness-stand, as blockheads.

JUSTIN HEROLD, M.D.

ECHOES AND NEWS.

Swallowed False Teeth.—The death of a man, aged sixty-eight, at East Hampton, Mass., was caused by swallowing two false teeth during sleep.

Fined for Illegal Practice.—A colored man employed in a drug-store in Washington, D. C., was recently fined \$50 in a police court for illegally practising medicine.

Prison Congress Postponed.—On account of the yellow fever the date of the Annual Prison Congress to be held at Galveston, Texas, has been postponed to December 2d to 6th, inclusive.

Influenza May Come.—The medical press of Europe is warning the public against a probable recurrence of influenza, which has been raging for months in a severe form in the district of Merv, Turkistan.

Appointment of Dr. Bates.—President McKinley has appointed Medical-director Newton L. Bates, Surgeon-general of the Navy Department, to succeed Surgeon-general J. Rufus Tryon of New York.

Vaccination Laws in England.—Vaccination laws are not enforced in England. At Norwich, with a population of over 100,000, the vaccination-officer's fees this year amounted to about \$40. He receives fifty cents for each case.

Bombay Again Stricken.—Sixty deaths from bubonic plague occurred in Bombay during the last week in September. The disease has reappeared in Kurrachee, and is gradually spreading. It is said that the government regards the situation as serious.

Typhoid Fever Attacks the Turks.—The news comes from Constantinople that typhoid fever is ravaging the Turkish troops in Thessaly. Six thousand men have already been invalided home, and four thousand others are awaiting transportation back to Turkey.

Typhoid Epidemic in Kent (England).—According to the *New York Times* there is an alarming outbreak of typhoid fever at Maidstone, Kent, due to the pollution of

water by drainage from a hop-pickers' encampment. Over 1300 cases have been reported.

Medal for Dr. Recamier.—The news comes from Paris that Dr. Recamier has been presented with one of the silver medals sent by the Czar to be distributed among those who distinguished themselves at the charity bazaar fire by saving others from perishing in the flames.

Professor Adami to Lecture at the New York University.—Professor Adami of McGill University has accepted the invitation of the New York University Medical College to deliver a course of lectures on general pathology. The course begins Friday morning, October 8th.

Obituary.—We regret to announce the death on September 20th of Dr. G. D. Ricketts at Proctorville, Ohio. He leaves a widow, one daughter, Mrs. G. D. Bush, and three sons, Edwin S., Merrill, and Joseph. All of the sons are physicians, practising in Cincinnati, Ohio.

The Restrictions of Medical Charities.—Dr. Stephen Smith, who was recently elected President of the Board of Charities of New York City, is reported as having said that hereafter not one person who is able to pay for medical aid will receive free treatment at any of the city institutions.

Yellow-Fever News.—It is reported that the yellow-fever epidemic is spreading in New Orleans. Many new cases have developed, five of which appeared in one of the fashionable avenues of the city. The mortality has decreased from fifteen to twelve per cent. No general alarm is as yet felt.

Fatal Railroad Crossing.—The wife of Dr. R. C. Gray of Springfield, Long Island, was instantly killed by a train at that place September 29th. The carriage in which she was driving with a friend and two children was demolished at a railroad crossing. The others were seriously injured but may recover.

Appointments Abroad.—Dr. T.W. Engelmann, Professor of the Medical Faculty of Utrecht, has been appointed ordinary professor of physiology, vice Professor du Bois-Reymond, deceased. Dr. Leopold Meyer, docent, has been appointed professor of obstetrics and gynecology at Copenhagen, vice Professor Stadfelt, deceased.

American Jubilee Fund Endows Hospital Beds.—Guy's Hospital (London) has received a donation of \$5000 from the Committee of the American Victoria Jubilee Fund to endow in perpetuity a "Queen Victoria Bed." The London Hospital and the Charing Cross Hospital have each received a similar donation.

Experimental Hygiene in the Argentine Republic.—It is reported that a laboratory, similar to the Instituto d'Igiene Sperimentale founded by Sanarelli in Montevideo, is to be opened in Buenos Ayres. It will be under the direction of Professor Ferruccio Mercanti, the sub-director of the laboratory over which Professor Sanarelli presides.

Bogus Doctor Convicted.—In a Brooklyn police court a

man named Siegfried Reubel has been convicted of practising medicine illegally. This is the individual who attempted to restore the sight of a little girl by placing about her head an iron band, which he tightened at intervals by means of thumb-screws with which the instrument was provided.

Death of Dr. Samuel Craig.—Dr. Samuel Craig died recently at the home of his parents in Brooklyn. During last year, while on duty at the Manhattan Hospital, Ward's Island, he contracted typhoid fever, followed by pneumonia, which speedily developed into phthisis, which latter disease ultimately caused his death. He was twenty-six years of age.

Veterinary College Open to Women.—The New York College of Veterinary Surgeons, the fall session of which began last week, has for the first time opened its doors to women, and one has already matriculated. The Board of Regents of the State University has recently placed the requirements for entering a veterinary college upon the same plane as those for entering a medical college.

Alcoholic Selection.—In a recent work, "The Present Evolution of Man," by Mr. G. Archdall Reid, an English writer, the theory is advanced that intemperance is an important factor in the elimination of the unfit, and in the consequent progress of the race, inasmuch as it kills off those persons who have an undue craving for alcohol. He calls this process of elimination "alcoholic selection."

Typhoid Fever Near Kingston, N. Y.—Many cases of typhoid fever are reported from various towns which lie near Esopus Creek, in Ulster County, N. Y. This stream, which is a popular fishing ground, has its source at the quarries at Malden, and its outlet at Kingston Point. It is claimed that the disease is caused by the pollution of the water by the Kingston sewer which empties into the creek.

Body Hidden in the Cargo.—The news comes from San Francisco that the dead body of a Chinaman was found stowed away in the hold of the ship "America," which recently arrived at that port from Prince William Sound with a cargo of salmon. It is supposed that the body was hidden there by other Chinamen in order to avoid a burial at sea. The appearance of the body indicated that the man had been dead for a week.

Honorary Degrees Conferred.—At the recent meeting of the British Medical Association in Montreal, McGill University announced that it had conferred honorary degrees upon the following: Lord Lister, Sir Walter Foster, Sir William Turner, Dr. H. Barnes, Dr. Michael Foster, Dr. Gaskell, Mr. Christopher Heath, Dr. Alexander Macalister, Dr. Saundby, and Mr. Wheelhouse, all of England, and Professor Richet of France.

Remarkable Recovery from Snake-bite.—The sting of the double-horned viper is said to be invariably fatal, yet a case is reported from Opobo, West Africa, where a man survived the bite of one of these reptiles. He was stung just above the right ankle, and within an hour the leg was three times its natural size. Iodin and potassium were

injected into the wound, and the man recovered after a desperate illness and some days of delirium.

Dr. Bermingham Appeals.—The local Board of Health of Liberty, Sullivan County, N. Y., refused Dr. Edward J. Bermingham permission to erect at that place a sanatorium for the care of consumptives. Dr. Bermingham appealed to the State Board of Health on the ground that the local officials have no authority to prevent the establishment of a hospital for the care of the sick. The question having been referred to Attorney-general Hancock, he sustained Dr. Bermingham's position.

Memorial to Marcello Malpighi.—The news comes from Rome that a monument to Marcello Malpighi, the great physician and biologist, has recently been unveiled in his native town, Crevalcore, in Italy. The monument is surmounted by a statue of Malpighi, sitting in profound meditation, book in hand, and is the work of the sculptor, Enrico Barberi. Among those present at the unveiling was Professor Kolliker of Würzburg, who spoke of Malpighi as "the founder of embryology."

Instantaneous Skiagraphy.—It is said in Paris that an important improvement in skiagraphy, as applied to medicine, has been brought before the Academy of Sciences of that city by M. Porche. It is proposed to make use of a fluorescent screen and to photograph the shadow on the screen. An extremely sensitive plate is required, and this plate must be protected from all other rays emanating from the Crookes' tube, except those which actuate the fluorescent screen.

The Astoria Water-Supply.—The Grand Jury of Queens County, L. I., which has been investigating the complaints against the water-supply of Astoria, reports that it is insufficient and sometimes unfit for use. It was recommended that larger mains be used to increase the supply. The report furthermore states that the Grand Jury deplores the lack of harmony in the different departments of Long Island City, which renders any concerted action for the benefit of the people impossible.

Pulmonary Phthisis in Europe.—At the recent meeting of the International Medical Congress at Moscow, Professor von Leyden read a paper on the important subject of the treatment of pulmonary phthisis in special establishments. He called attention to the enormously large number of persons who perish from this disease, and said that in Germany there are 1,200,000 consumptives, of whom 180,000 die every year, and estimated that the annual mortality from phthisis in Europe is upward of 1,000,000 persons.

Insanity in Prussia.—In connection with the increase of insanity in England, mentioned in an article in the last issue of THE MEDICAL NEWS, it is said that a similar, if not a worse, condition of affairs exists in Prussia, where the insane asylums are not large enough to accommodate those who require institutional care. In 1871 the total number of lunatics in Prussia was 55,063; in 1880 it had risen to 66,345, while in 1896 the number reached 82,-

850. It is interesting to note that more men than women are affected.

Hydrophobia in Scranton, Pa.—The death of a ten-year-old boy from hydrophobia is reported at Scranton, Pa. The boy was bitten by a rabid dog sometime last March. During delirium the boy's teeth grazed his father's finger. It was antiseptically treated at the time and no further attention paid to it. The hand and arm now show considerable swelling and are very painful, and the man has been advised to come to New York to undergo the Pasteur treatment. It is said that the dog bit seven persons, and the boy above mentioned is the second who has died.

Health Reports.—The following statistics concerning cholera, yellow fever, smallpox, and plague, have been received in the office of the United States Marine Hospital Service during the week ending October 2, 1897:

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Mobile, Ala.....	September 24 to October 1	40	6
New Orleans, La.....	September 25 to October 1	160	15
Biloxi, Miss....	September 25 to October 1	117	3
Edwards, "	September 25 to October 1	126	4
McHenry, "	September 30 to October 1	4	..
Ocean Springs, "	September 25 to October 1	5	1
Perkinston, "	September 10.....	1	..
Scranton, "	September 26-29.....	11	3

YELLOW FEVER—FOREIGN.

Rio de Janeiro, Brazil..	August 21-28.....	1	..
Cardenas, Cuba.....	September 4-11.....	..	1
Cienfuegos, "	September 5-19.....	..	16
Havana, "	September 16-23... ..	..	23
Matanzas, "	September 8-22.....	..	3
Panama, U. S. Col... ..	September 10-13.....	2	..
Bombay, India.....	August 17-31.....	..	193
Calcutta, "	August 7-21.....	..	9
Madras, "	August 21-27.....	..	7
Singapore, "	July 1-31.....	..	1
Kanagawa, Japan.....	August 24 to September 2.	1	1
Osaka and Hiogo, " ..	August 21-28.....	1	..
Tokio, "	August 24 to September 2.	14	5

PLAGUE—FOREIGN.

Bombay, India.....	August 17-4.....	..	13
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SMALLPOX—UNITED STATES.

Birmingham, Ala.....	September 18-25.....	2	..
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SMALLPOX—FOREIGN.

Athens, Greece.....	July 1-31.....	4	..
Glasgow, Scotland.....	September 4-11.....	..	1
Alexandria, Egypt.....	July 23 to August 12.....	..	4
Havana, Cuba.....	September 16-23.....	..	1
Rio de Janeiro, Brazil..	August 21-28.....	9	..
Brussels, Belgium.....	August 28 to September 4.	..	1
Cairo, Egypt.....	July 23 to August 12.	..	8
Hong Kong, China....	August 1-14.....	..	3
Paris, France.....	August 29 to September 11	..	4
Madrid, Spain.....	September 1-7.....	..	2
Warsaw, Russia.....	August 28 to September 11	..	15
St. Petersburg, Russia..	September 4-11.....	4	..
Madras, India.....	August 21-27.....	..	3
Calcutta, India.....	August 14-21.....	..	1
Bombay, India.....	August 24-31.....	..	1
Prague, Bohemia.....	September 4-11.....	2	..

American Women Students at University of Zurich.—A society has been formed at Zurich, Switzerland, by Amer-

ican women who are studying for a doctorate at that place, and a circular has been issued containing information for those who intend to study in Europe. Among other things it states that no woman should go to Zurich with the immediate intention of university-study, unless she has not only a reading but a speaking knowledge of German, and furthermore, that Zurich is not the place to acquire this knowledge because of the dialect spoken there and because of the number of foreigners in the town.

Disinfection of Mails from Infected Localities.—There are different ways of disinfecting mail matter, but in the New York Post-office it is done in the following manner: A bag of letters upon being received at the quarantine station is turned over to an employee, who, with his hands carefully gloved, drops them one by one into the chute of a machine which punches a circular hole, about one-sixteenth of an inch in diameter, through each. As they emerge from the punching-machine the letters fall into a basket from which they are emptied into a huge circular tank inside of which is a cage of steel wire. This cage revolves rapidly by means of electricity, and for an hour the letters are shuffled up and turned about, during which time they are subjected to the fumes of sulphuric acid. When this is finished live steam is turned on, and the cage is again set in motion for a shorter space of time. The letters are then returned to the mail-bag, which has meanwhile been thoroughly fumigated in the steel cage, and are delivered in the usual way.

CORRESPONDENCE.

A HINT TO LIFE-INSURANCE EXAMINERS.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: If an applicant for life insurance on being examined states that he has some eye trouble, and is at the time under the treatment of a specialist, whose address he supplies, would you consider it the duty of the examiner to write to the specialist to ascertain the cause of the eye trouble, or the duty of the medical director of said insurance company?

Respectfully,
"E."

MANCHESTER, VA., June 1, 1897.

[The above letter was referred to Dr. E. W. Lambert, Medical Director of the Equitable Life Assurance Society, and the following reply received.]

DR. J. R. GOFFE.

MY DEAR DOCTOR: My answer to such an inquiry would be this: If an applicant came before us and should state that he was under treatment by any specialist, we would expect the applicant to furnish us with a certificate from the specialist as to what he was treating the applicant for, and also all the particulars relating to the case from the standpoint of the specialist. In other words, it is the duty of the applicant to furnish the company with all the facts in regard to his present and past history, and not our business to hunt up and find out what has been the matter with him.

Yours very truly,

E. W. LAMBERT, M.D., Medical Director.

NEW YORK, August 2, 1897.

KEROSENE-OIL POISONING.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In the issue of THE MEDICAL NEWS of September 18th, I read with interest the report of a case of kerosene-oil poisoning by Dr. G. Edgar Hoffman of Rochester, Indiana, as I had just observed a very similar case in which a boy aged seventeen months swallowed a mouthful of kerosene oil, and strangled severely. The mother ran into my office with the child, so that I saw him within one minute after the ingestion of the oil. I simply inverted the child—not entirely, but so that his head was lower than his body, and face down. I tapped him sharply on the back, which caused the sudden expulsion of air from the lungs and expelled the few drops of oil from the throat. I next applied pressure with my hand over the stomach, and in a very short time had him vomiting nicely. In fact his stomach was entirely emptied in about five minutes. The child became very pale and almost completely unconscious, in which condition he remained for nearly two hours. From this time on he improved quite rapidly and next evening was about as well as usual.

I would not have considered this case of sufficient importance to report had not Dr. Hoffman mentioned the scant literature upon the subject. In connection with this I might mention another case which occurred in my practice about four years ago. I was called in great haste to see a child that had swallowed coal-oil. This did not prove so serious. A dose of zinc sulphate caused immediate vomiting and the child apparently suffered little. There was no strangulation. At the time of the occurrence of my first case I was assured by Dr. J. H. Kinyoun of Centreville, that I need not be greatly alarmed as the oil was not, in itself, very dangerous, and the old doctor related that he himself had once taken nearly half an ordinary glassful of the same oil—kerosene—and never felt the least discomfort from it.

D. D. BARR, M.D.,

PRAIRIE HOME, ILL., September 22, 1897.

OUR BERLIN LETTER.

[From our Special Correspondent.]

THE LEPROSY CONGRESS AND THE ATTENDANCE OF SPECIALISTS—KOCH'S NEW TUBERCULIN AND THE RESULTS IN HIS OWN SERVICE; SOME REASONS FOR THE NON-SUCCESS REPORTED—OTHER SERUMS, PROPHYLACTIC AND CURATIVE, IN THE INFECTIOUS-DISEASE WARDS—THE GERMAN APOTHECARIES' UNION AND THE ADMISSION OF WOMEN.

BERLIN, September 27, 1897.

As the time approaches for the holding of the Leprosy Congress here, the interest shown in it by specialists becomes more apparent. Though so many congresses have been held during the last two months, this one will not suffer by comparison. It is clear that the practical experts in leprosy—the medical men who are living in actual contact with the disease where it is endemic—and the skin specialists whose writings on the subject have been the generally accepted teaching of the medical world are to meet at last under the most favorable circumstances

for the ventilation of discordant ideas. As is usual in most branches of medicine, the theorists and the practitioners have not been strikingly accordant in the general treatment of the subject. Some little fear was entertained that the French school might not be well represented, but some of the best known specialists have signified their intention of being present. There are to be two representatives of the Turkish government from Constantinople, and other delegates will be present from Turkey in Asia, Roumania, Alexandria, Algiers, the East, and Japan, all men of wide practical experience in dealing with the disease.

So much has been said and written recently on the subject of Koch's new tuberculin, and so much has been of an unfavorable nature, that it occurred to your correspondent that it would be worth while to find out what the present opinion of it is in the infectious wards of the Charité, where Koch's assistants are in charge. I found Professor Brieger, who, during Professor Koch's absence in South Africa, is acting director of the department, very ready to express an opinion on the matter. He knows how much that was unfavorable was said at the Moscow Congress, even by distinguished authorities from Berlin, and regrets that a representative of the Koch Institute was not present to state the other side of the case. Under the circumstances, however, with Professor Koch himself absent, this was impossible.

During the course of a walk through the wards with Professor Brieger I saw a number of patients who at present are under treatment with the new tuberculin. Not by any means are all the patients suffering from tuberculosis considered suitable subjects for the administration of the remedy. When the destructive process in the lung is at all advanced very little can be hoped for from the treatment. Regeneration of lung-tissue cannot be expected, and, besides, infection with other micro-organisms has inevitably taken place, and the process is eminently a progressive one. Unfortunately, it is just this class of patients which has been used in testing the new T. R. When all other means were hopeless and the patient seemed doomed anyhow, tuberculin was used as a last resort. The recollection of the unexpected dangers developing under the use of the old tuberculin is too vivid to allow most clinicians to use this in just the class of cases for which it is adapted. According to Koch it is in the subjects in whom the physical signs are scarcely more than suspicious, when there are few, if any, tubercle bacilli in the sputum, but when the febrile reaction after injection of the old tuberculin shows the indubitable presence of a tuberculous process that the new remedy can be depended on to effect a cure. As to the danger for such patients, not a single bad result, when a sluggish tuberculous process has been irritated into acute activity, has occurred in all the cases treated at the Institute. As to the possibility of the presence of any living tubercle bacilli in the new tuberculin, when properly prepared, it is the merest chimera, for, in almost countless cultures made by professors and assistants in the laboratories, it has been demonstrated beyond doubt that these have been thoroughly eliminated. As to the reported non-sterility

of certain samples of the new tuberculin which came from the factory at Höchet, this may have been true as regards the presence of certain non-pathogenic germs in the first issues from the factory. Large quantities of the agent were called for at once, and some of the minute precautions so necessary for absolute sterility, especially as regards molds and certain harmless air-germs, may have failed of fulfilment. None of the later products, however, is open to such an objection, unless through careless handling afterward.

Some of the cases in which striking improvement has been noted during the course of injection of the new tuberculin are those of external tuberculosis. Lupus, especially, is soon and favorably affected by the remedy, and the healing goes rapidly on to complete cure. Certain external eye diseases, too, when all other methods of treatment have been tried without success, yield to its influence. In the wards at present there is a patient, about to be dismissed as cured, who is a remarkable example of this. The case was one of multiple tuberculous ulcers of the cornea, which absolutely refused to heal under all manner of treatment at the hands of an experienced ophthalmic surgeon. The cure is absolute.

Such cases are very striking, because the results can be clearly seen. There is no question of auto-suggestion, with seeming improvement in symptoms and temporary arrest of the progress of the disease, only to be followed by inevitable relapse. Cases in which the physical signs have shown that the tuberculous areas in the lungs have become less in size during the course of the injections are not lacking, and this sometimes when the destructive process has been quite advanced. There is a remarkable case under treatment just now, of a well-to-do patient who insisted on receiving the injections, though his was evidently at a stage of the disease not considered suitable for the T.-R. treatment. Injections during several months have been followed by lessening of the physical signs in the lungs, and he has gained fifteen pounds in weight.

As to the serums in use at the Institute, reports are not very encouraging. A tuberculous antitoxic serum has been used without effect, and the impression seems to be that an antitoxin for tuberculosis is impracticable. A streptococcic serum, used in conjunction with tuberculin in cases of mixed infection, did not seem to produce any good result. Generally, the streptococcic serums have been unsatisfactory in their action. Recent work at the Institute has demonstrated that the streptococcus pyogenes and the streptococcus erysipalatosus are the same, but the specific virulence of various forms of the streptococcus for animals, and even for individuals, is so different that the preparation of a curative serum which will give results in any definite case seems a hopeless task as yet. Streptococcic serums for the treatment of carcinoma have not proved successful, and even Petruschky's preparation, which, for a time, at least, seemed to promise amelioration of symptoms and slower progress of the malignant invasion, has not continued to give such results as would encourage further experimentation. Cascarelli's serum

for the treatment of leprosy has been tried in several cases, but absolutely without effect.

At the meeting of the German Apothecaries' Union the other day, the resolution that "women had shown themselves to be capable mentally, as many of them were capable physically, of fulfilling the duties of apothecaries, and so should be admitted as members of the Union," was voted down by a large majority. The fact that it should have been presented at all is significant, for in Germany more than anywhere else at present are what may be called the intellectual rights of woman and the question of her employment on a plane at all equal to that of man a subject of derision. The heaven is evidently at work here also.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE SOCIAL SIDE OF THE COMING MEETING OF THE AMERICAN PUBLIC-HEALTH ASSOCIATION—OPENINGS OF THE MEDICAL SCHOOLS—DR. WILLIAM S. CARTER HONORED—DR. GEORGE W. PFROMM—DR. CHARLES W. BURR—VITAL STATISTICS FOR THE WEEK ENDING OCTOBER 2D.

PHILADELPHIA, October 4, 1897.

ARRANGEMENTS for the celebration of the twenty-fifth anniversary of the American Public-Health Association, which meets in this city on the 26th, 27th, 28th, and 29th of this month, have been almost completed by the local committee, of which Dr. Benjamin Lee is chairman, and sufficient progress in the details connected with the work of the gentlemen entrusted with the entertainment of the visitors has been made to indicate that the four hundred expected delegates will be fittingly entertained during their stay in Philadelphia. The headquarters of the Association will be at the Hotel Walton, where daily sessions will be held, and which is admirably adapted to the purpose. In addition to the receptions given the members of the Association by the various scientific and teaching bodies of the city, the Committee of Arrangements has planned visits to many places of interest throughout the city. The United States Government has also placed at the disposal of the delegates one of the revenue vessels stationed at this port, and two steamboats belonging to the Sanatorium Association have been secured by the Committee, whose intention it is to convey the visitors to the Government Quarantine Station some miles below the city, where a day will be spent in inspecting the hospital and disinfecting plant situated there.

The session of 1897-'98 of the Woman's Medical College of Pennsylvania was formally opened on September 29th. The opening exercises took place in the large lecture-room of the college, and were presided over by Dr. Clara Marshall, the Dean of the institution. After Dr. Marshall's usual announcements concerning the arrangements for the ensuing year, Dr. Anna M. Fullerton, Clinical Professor of Gynecology, the lecturer for the occasion, was introduced, who took for her theme, "Methods in the Study of Medicine." From present appearances, the outlook for the college year at the Woman's Medical College is exceedingly gratifying to the friends of this progressive institution.

The opening of the Medical Department of the University of Pennsylvania took place on October 1st the ushering in of the new term being marked by elaborate exercises, in which a prominent part was taken by the distinguished English prelate, Canon Gore, of Westminster Abbey, who made an address to the class. The changes made in the medical faculty since the last session have not been noteworthy, and the *personnel* of the teaching force remains practically unaltered. The enrolment of students for the present term indicates, as far as it is possible to do at this time, a full attendance in the medical school, in spite of the constantly increasing standard of requirements for admission—a standard which the University has gradually raised, year by year, to its present status.

The introductory lecture to the seventy-third annual course of lectures at the Jefferson Medical College will be delivered by Dr. G. E. de Schweinitz, Professor of Ophthalmology, on the evening of October 4th, in the amphitheater of the Jefferson Medical College Hospital. The exercises will be opened by an address by the Hon. William Potter, the President of the Board of Trustees of the college. The class at Jefferson this year far exceeds the expectation of the authorities of the institution, who naturally anticipated somewhat of a diminution in the number of matriculants, in consequence of the radical changes tending toward the high standard of education which the college demands of its prospective students. The faculty of this institution, its laboratory equipment, and its clinical facilities leave nothing to be desired by the seeker for a school offering every modern method for the study of his chosen profession, under the guidance of teachers whose views are authoritative on the subjects upon which they lecture.

The regular fall and winter term at the Medico-Chirurgical College will commence on October 4th with a registration in every department in excess over that of the preceding year. In addition to the elaborate clinical amphitheater erected by the college during last spring, many other improvements in the buildings have been completed. By a bequest of the late Professor William H. Pancoast, the Pancoast Library, consisting of nearly six thousand volumes of medical works, will be placed at the disposal of the students of the college.

Dr. William S. Carter has resigned his position as Assistant Professor of Comparative Physiology and Demonstrator of Physiology in the Medical Department of the University of Pennsylvania, to accept the Professorship of Physiology at the University of Texas, Galveston. A reception was tendered Dr. Carter by many of his colleagues and friends at the University on the eve of his departure, on September 28th.

Dr. George W. Pfromm has been elected Lecturer on Materia Medica and Therapeutics in the Medico-Chirurgical College, to succeed Dr. William B. Stewart.

Dr. Charles W. Burr delivered an address on "The Remote Results of Injuries on the Nerves" before the Philadelphia Hospital Medical Society, on September 27th.

The number of deaths in this city for the week ending October 2d was 342, a decrease of 10 from those of the preceding week, and a decrease of 59 from the correspond-

ing week of last year. The number of deaths from contagious diseases was 33, or 11 less than those reported last week. Cases of diphtheria numbered 97, with 27 deaths; scarlet fever, 25, with 2 deaths; and enteric fever, 31, with 4 deaths.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

RADICAL CURE OF HERNIA BY INJECTIONS OF THE CHLORID OF ZINC—NATURE AND TREATMENT OF EXOPHTHALMIC GOITER—PAINFUL HYPERTROPHY OF THE BREAST AND ITS CURE BY MASTOPEXY—FRACTURES OF THE PATELLA.

AT the session of the Academy of Medicine, July 6th, LANNELONGUE showed some children upon whom he had practised a *radical cure of hernia, by injections of a ten-per-cent. solution of chlorid of zinc*. Of forty-four children and youths, aged from four months to twenty years, treated in this manner, a perfect cure was obtained in forty-one. One of the failures was the very first patient operated upon, and who was insufficiently injected. A cure followed a repetition of the treatment. The other two were unsuitable, by reason of the size or density of the hernia, for this method of treatment. In seven adult cases, success was obtained five times. The essential points of this method of treatment are to avoid injection into the peritoneal cavity, by pressure of the finger over the internal ring, and to avoid injury of the cord, by isolating it at the moment that the injection is made. Two or three injections are usually required, of ten or twelve drops each, and as the pain is pretty sharp it is better to make them under chloroform narcosis.

ABADIE read a paper upon *the nature and treatment of exophthalmic goiter*. Three theories of its origin have been advanced—the hematic, nervous, and thyro-genous. The last is the most seductive and has been widely accepted. None the less, all surgical attacks upon the gland itself have proved uselessly dangerous. The most rational theory is that the disease is due to permanent excitation of the vasodilators of the cervical sympathetic. The benefit which follows division or resection of the cervical sympathetic between the superior and middle ganglia is proof of the correctness of this theory. In all cases in which such division has been made, the exophthalmus and goiter have decreased. If, later, there is a recurrence of these symptoms, this is doubtless due to a restoration of nerve-fibers. In the resections of a part of the gland, the exaggeration of symptoms which so often follows is apparently due to the irritation of torn nerves, and in exothyropexy this irritation reaches its maximum, and explains why patients die from an operation which in itself does not appear to be dangerous. This theory of a dilatation of the vessels also explains the formidable hemorrhage which is met with in partial resection of the gland.

The rational treatment, therefore, is section of the cervical sympathetic between the superior and middle ganglia. The inferior branch of the nerve is small, and may be neglected. If there is any doubt as to the diagnosis, before resorting to a surgical operation the patient

should be put on the thyroid extract for a few days. If there is improvement the proof is conclusive that the goiter is an atrophic one, and the medication is to be continued until a cure is obtained. If the goiter is truly exophthalmic, the symptoms will be aggravated, and the operation referred to should be performed.

POUSSON spoke of *painful hypertrophy of the breasts and its relief by mastopexy* before the Surgical Society, June 30th. The patient to whose case he referred was a very stout woman, whose breasts reached her groins, preventing her from wearing corsets and from doing work, and giving her in addition a great deal of pain. An elliptical incision was made along the inferior surface of each breast, and a large portion of skin and fat removed. The glands were sutured to the fascia of the greater pectoral muscles, and the wounds closed by sutures. Union was prompt, and the deformity, with its accompanying pain and disability, was permanently relieved.

In speaking of *fractures of the patella*, POIRIER said that the dimensions of the patella vary much according to the age of the individual, as successive layers of osseous tissue are added peripherally with advance in years, the central part of the bone meanwhile becoming very porous. The practical lesson from this observation is that the treatment of fractures of the patella by the open method is not alike in all cases, but that more solid patellæ are fitted for suture, while "cooperage" is the best for more porous bones.

BERGER mentioned a case of *primary melanotic sarcoma of a gland* in the subhyoid region. The most careful search failed to reveal any other source of the trouble.

MARCHAND mentioned a similar case in which the sarcoma was of the inguinal glands, and another in which the glands of the axilla alone were affected.

At the Medical Society of the Hospitals, July 2d, GAL-LIARD related the case of a man, aged forty-three years, who suffered from pleurisy, at first serofibrinous and then purulent. A pleurotomy was performed in the eighth intercostal space, and a drain left in position. Fifteen days later the drain was removed, and cicatrization rapidly followed. Some time later it was observed that with each expiration there appeared in the scar a soft tumor about the size of a nut, which was non-pulsile and non-crepitant and easily reducible. Under the influence of a compress and bandage, worn for some months, the little hernia of the lung permanently disappeared.

Vienna.

REPORT OF THE GERMAN COMMISSION UPON THE PLAGUE AT BOMBAY—SUPRARENAL EXTRACT USED LOCALLY TO CONTROL HEMORRHAGE.

AT the session of the Imperio-Royal Society, May 28th, ALBRECHT presented a *report of the German commission upon the Bombay plague*. The commonest form of the disease is the *septic-hemorrhagic* one. The buboes occur oftenest in the groins, and next in the axillæ and the neck, involving sometimes a single gland, sometimes a whole group. On cut section a gland shows a number of red and yellow areas, and these infarcts are often con-

tinued into the surrounding tissues. If death does not ensue, there usually results suppuration and breaking down of the skin with discharge of hemorrhagic and necrotic masses. The whole process is accompanied by marked edema, and often proceeds with great rapidity. In a few hours from the time of outbreak, vomiting, fever, etc., and infiltration of the tongue, pharynx, and gullet, are common.

In the vicinity of the original bubo, there frequently appear bullæ filled with clear or cloudy serum, and proceeding to carbuncle formation. These were supposed to be the result of lymphangitis, but although this cannot be proved, the fact that one of the physicians of the investigating party developed a bulla as the result of a scratch received at an autopsy supports this theory. This bulla became hemorrhagic, and its contents contained a pure culture of the pest bacillus.

Besides the buboes, the general lymph system shows infection, the throat, as already referred to, often presenting the appearance of diphtheria, while the spleen is so filled with the bacteria that they form a considerable part of its swelling.

Hemorrhages into the pleura and other serous membranes are the rule. They were also not wanting in the muscles of the neck, breast and abdomen.

Another form of the disease, the *septic-pyemic*, develops in those cases in which the poison has had time to produce embolic masses in the internal organs. These are especially noticeable in the lungs and liver and to a less extent in the kidney.

The third form is a *primary plague pneumonia*, and it is by this form that English doctors and nurses are chiefly attacked. The pneumonia occurs in patches, and these are indistinguishable from the pneumonic areas which occur in the second form. Cases of this type run a fearfully rapid course and quickly lead to death.

The infection reaches the system in most cases through the skin, but the numberless scratches on the bare legs and arms of the Hindus make it difficult to determine in most instances its exact point of entrance. Whether the stings of insects are responsible for the infection in any case could not be ascertained, though this is the popular belief among the natives. From the occurrence of primary plague pneumonias, it appears that infection by inhalation is possible, and doubtless infection sometimes takes place through the tonsils.

The plague bacillus discovered independently by Kitasato and Koch is easily isolated and may often be obtained in pure culture from the blood. The pus is usually sterile, or contains other germs, but not the plague bacillus. Animals artificially infected with the bacillus, quickly die with all the symptoms of the disease, but it does not occur spontaneously in any animal except the rat. The members of the commission did not see any benefit result from the use of a plague-serum. So far from being surprised at the high mortality of the plague, they expressed their wonder that more did not die of it, so bad are the conditions of life in which the natives are placed.

At the session of the Medical Club, June 16th, KONIGSTEIN said that the *extract of the suprarenal capsules*

is the only one of the animal extracts which has been used locally. Dropped into the eye, it is said to produce a profound anemia. Taking a suggestion from this, it has been used to control hemorrhage, but its working in this direction leaves much to be desired, as it dilates the larger vessels, while contracting the smaller ones and capillaries.

SOCIETY PROCEEDINGS.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Fourteenth Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

DR. ROBERT H. BABCOCK of Chicago presented a paper, entitled

A BRIEF CONSIDERATION OF SOME POINTS IN THE MANAGEMENT OF CONSUMPTION,

for the purpose of drawing forth discussion by the members of the Association. He inquired first whether the slight elevation of temperature in the early and unmixed forms of the disease is inflammatory in origin, as held by Jaccoud, or whether it is an expression of infection by the bacillus tuberculosis. For diagnostic purposes he attaches no importance to the occurrence of afternoon temperatures below 100° F., which should be regarded as subfebrile, fever not being present until the temperature reaches 101.3° F. For temperature below this point, and even when fever is moderate, *i.e.*, between this point and 103° F., he orders absolute rest in the open air when possible, regulates the diet, and promotes free expectoration. Solid food is only allowed at such times during the day as the temperature is subfebrile or normal—generally in the morning, of course. Liquid diet, such as milk properly diluted with some alkalin water, is allowed when the fever is present. Patients are instructed how to cough intelligently and efficiently, and if the sputum is tenacious terpin hydrate or some other equally efficient and harmless expectorant is administered; in the belief that at this stage febrile temperature is due largely to absorption and consequent sepsis. Dilute hydrochloric acid, pepsin, pancreatin, taka-diastase, and the like are administered to aid the enfeebled digestion. If such simple measures do not suffice, careful sponging is resorted to whenever well borne. He administers as little medicine as possible, apart from strychnin and the carbonates of guaiacol and creosote, relying chiefly on fresh air, rest, and nourishment. Whenever drugs are ordered they are usually in response to troublesome symptoms, such as cough and sweating, anorexia, diarrhea, and the like.

The second symptom discussed by the speaker was night-sweats. They are a phenomenon of sepsis, and the ideal treatment would be the removal of the cause. He gives picrotoxin, $\frac{1}{60}$ of a gram, in the late afternoon, and a like dose in the evening, so as to obtain the action of the remedy before the expected sweat occurs. He never uses atropin for this purpose, but sometimes orders camphoric acid in 15-gram doses, three times daily. The picrotoxin rarely fails.

Diarrhea is another symptom which, in advanced cases,

is often very obstinate, and requires skilful handling. He rarely prescribes opium, preferring intestinal antiseptics, as dermatol and other preparations, benzonaphthol, and salophen; but when he does resort to an anodyne he gives phosphate of codein. A tuberculous physician, now in Texas, related that after having had obstinate diarrhea for months while in Mexico, he obtained prompt and lasting relief from enteric pills of creosote. As this treatment was coincident with his removal to a somewhat lower altitude in Arizona, the query arises, How much is to be attributed to the creosote, and how much to the change of location?

The next query was, Should we send our patients to Colorado and New Mexico if the larynx is infiltrated, but not yet ulcerated?

Finally, what opinion should one give to a patient who has regained his health at a high altitude and then desires to return for permanent residence to his old home at the sea-level? The speaker has always regarded such a course unwise, if not actually unsafe, even in cases of incipient and circumscribed lesions. Aside from the fact that the climate of the patient's former home is less dry, equable, sunshiny, and pure, it has seemed a dangerous experiment, because the apices and borders of the lungs expanded under low atmospheric pressure are again likely to fall into comparative disuse at a low altitude. Will respiratory gymnastics prevent this? Is it safe for a patient, having nearly or quite regained health in Colorado or New Mexico, to remove permanently to even desirable localities in Southern California, Texas, or other comparatively salubrious climates of lower altitude? Is it necessary to impress patients who have not pronounced tubercular inheritance with the importance of changing residence permanently?

DISCUSSION.

DR. V. Y. BOWDITCH of Boston: In regard to what Dr. Babcock has said about it not being necessary to force down the temperature of phthical patients who do not complain of fever, I can heartily agree with him. Attend to the general condition of the patient, and leave the fever alone unless it causes great discomfort. As to the return to a lower altitude after a residence in a higher one, where health has been regained, my early teachings and my own experience have made me feel it is an experiment attended by much risk. We know of many exceptions, doubtless, but my usual advice to a phthical patient is to remain in or near the place where he regained his health.

DR. HANCE of Lakewood: As to the question of sending laryngeal patients away, I think that it depends upon the degree of laryngeal invasion. If they are in the last stage of phthisis, they might as well stay at home. I have found that Tully tablets, in combination with bismuth or salol, are very beneficial in the diarrhea of such patients. Instead of using morphin in the last stages of phthisis, codein will often carry the patient on for two or three weeks, or even months, after which we must fall back on morphin. There is one preparation of service in the early stages of the disease. Dr. Quinby spoke of it four years ago. It is aquazone, which improves the condition of the stomach. The last report of the sanatorium

at Saranac Lake refers to the use of tuberculin. There were many patients there to whom it was administered. During the time it has been in use at the sanatorium there have been twenty-four patients discharged "apparently cured." Their after-history has been followed, and it is reported that twenty-two are now well, that one died of chronic alcoholism, and one died in an insane asylum.

DR. NEWTON of Montclair: I should like to know why Dr. Babcock objects to the use of atropin to check night-sweats of phthisis. I have generally obtained good results from its use. I am now treating an advanced case of phthisis in which atropin in reasonable doses having apparently lost its power, I resorted to the use of agaricin, and afterward to camphoric acid. Neither of these drugs proving to be satisfactory, I tried sulphonal in $7\frac{1}{2}$ -grain doses every six or eight hours, and was much pleased with the result.

DR. HARE of Philadelphia: The results of the experiments of those who have done laboratory work prove that guinea-pigs confined in laboratories are naturally subject to tuberculosis. The great objection to the use of atropin in the treatment of night-sweats is the fact that it disorders the digestion by stopping the secretion of gastric juice. I have for a number of years used camphoric acid with very great satisfaction. It should be given in the dose of at least 20 grains three or four hours before the usual time of the sweat, so that it may be absorbed from the stomach in time to exert its physiologic action. It dissolves very slowly, and is best given in a cachet. I have recently been engaged in studying the rapidity of absorption of various drugs, and I believe that the condition of the gastro-intestinal mucous membrane in relation to the absorption of remedies is not sufficiently studied. Briefly, I may state that if a small quantity of some gastric stimulant, such as capsicum, is added to the camphoric acid in the capsule, it will aid very materially in the absorption of this antisudorific remedy.

DR. HANCE: My experience has not been such as Dr. Hare describes. I have used at least 200 guinea-pigs in experimental work. By far the largest proportion of these were found free from any tuberculous infection after they had been subjected to inoculation, and only those were tuberculous in which we had reason to suspect the presence of the tubercle bacilli previous to inoculation. If guinea-pigs are found tuberculous without any inoculation, they have either been inoculated by reason of bad breeding-quarters or lack of care in looking after them in the laboratories where the experiments are performed.

DR. SOLLY of Colorado Springs: Some physicians think that because the patient worries about the night-sweats and feels that the doctor should be giving him something to stop them, they should fall in with the patient's mood. I would let the night-sweats take care of themselves and devote myself to building up the system. It is generally a question of food. The intelligent use of whisky is to be commended, but the patient should not be allowed to drink all the whisky he can.

Concerning tuberculous laryngitis, I am convinced that the delusion ought to be put to one side that high altitudes exert an unfavorable effect. If altitude is good for

tuberculosis, it will be good for the other complaint also, but not otherwise. Another point is that tuberculous laryngitis in the ulcerative stage should be treated locally.

DR. W. H. DALY of Pittsburgh: In the belief that we would all like to hear of the experience of others upon this interesting subject, I would state that for three years I have been administering doses of $\frac{1}{2}$ to 1 drop of pure carbolic acid, with 1 to 2 drops of compound liquor of iodine in water, one-half hour before meals, followed by as much hot water as the patient can drink, with very beneficial effects; in fact, in some cases I have succeeded in arresting the progress of the disease. I found some of the more fickle-minded patients objected to taking this solution. I therefore had some tablets made representing the same, or supposed to represent the same drugs and dose, but equally good results did not follow their use. I also keep the air of the bed-chamber saturated with iodoform, and find that patients soon become accustomed to the odor. If I were to be denied all remedies but one for the abatement of cough, I should choose laudanum in the minimum adequate dose. Another valuable remedy for the cough of phthisis is sulphate of codein in 1-grain doses at bedtime; it will carry the patient through the night without cough, and disturb the secretion but slightly.

DR. KNIGHT of Boston: I think that it is important to treat easily accessible laryngeal ulcerations locally. The present method is by curetting and the application of lactic acid. This will often prove very satisfactory, and should be tried, especially when the ulceration seems superficial and there is no perichondritis. I use iodoform internally, 1 to 3 grains of this taking the place of creosote. I have found that patients will tolerate from 3 to 6 grains of it a day. I would like to ask Dr. Daly what effect he wished to obtain from the use of iodoform, and whether he used it for its antiseptic effect.

DR. DALY: In my opinion, iodoform is the best and safest germicide which can be used in the air-passages. I am in the habit of cleansing, as far as I can, the gray mass from the ulcers of laryngeal phthisis and then covering the surface with iodoform powder, and I instruct the nurse or attendant to repeat this often, and always after free expectoration by the patient. I endeavor to bring the patient as completely and quickly as possible under the influence of iodoform, and maintain the influence, and if this can be done, and foolish objections of friends as to the odor overcome, an arrest of the disease and, in many instances, a cure may be expected. I have had some phthisical patients that lived six, eight, and ten years, apparently well, and died from other causes. I have also given iodoform internally, in from 1- to 5-grain doses, as an antiseptic and alterative in other diseases, especially those of the digestive organs.

DR. BABCOCK: Concerning the danger of allowing tuberculous patients to return to their old homes, I may say that this question has troubled me more than any other. Dr. Hare's objection to the use of atropin seems to me a sufficient one, and its unpleasant physiologic effects are enough to influence us to try some other remedy. I cannot pass by the remarks of Dr. Daly concerning the use of laudanum. Of course, we are sometimes compelled

to use opium in cases of consumption, but I think its use should be put off as long as is possible, and that the codein preparations should be employed instead, since they are devoid of the unpleasant effects of other opiates.

THERAPEUTIC HINTS.

For Eczema of the Genital Organs.—In this disease, so remarkable for the severity of the subjective symptoms, for its tendency to persistence, recrudescence, and nocturnal exacerbation, the following formulæ are highly recommended by Finny of Dublin, to allay irritation:

℞	Lin. calcis	f 3 iv
	Ext. belladonnæ	gr. xii
	Zinci oxidi	3 ii
	Glycerini	f 3 ii
	Aq. calcis	f 3 iv.

M. Sig. Lotion, to be applied at night after bathing the parts in hot water.

℞	Lin. calcis	f 3 iv
	Ac. hydrocyan. dil.	f 3 i
	Sig. plumbi subacetat.	f 3 ii
	Glycerini	f 3 ii
	Aq. rosæ, q.s. ad.	3 viii.

M. Sig. Cream, for application on strips of old linen.

For Exophthalmic Goiter.—HUTCHINSON advocates the use of potassium bromid, in 20-grain doses, three times a day. The salt should be taken an hour or two after meals in half a tumblerful of water.

For Galactorrhea.—

℞	Atropinæ sulph.	gr. iv
	Aquæ rosæ	3 i.

M. Sig. Apply on lint or cotton over the breast and remove when the throat becomes dry.—*Bartholow.*

For Fætor of the Breath, due to carious teeth.

℞	Sodii bichloratis	gr. xv
	Thymol	gr. vii
	Aq. dest.	3 lxxv.

M. Sig. Mouth-wash.

For Acute Gout.—

℞	Ext. colchici acetici	} aa	gr. i
	Ext. aloes		
	Pulv. ipecac.		
	Hydrarg. chlor. mitis		
	Ext. nucis vomicæ		gr. ¼.

M. Ft. pil. No. i. Sig. One such pill to be taken every four hours until purgation ensues.—*Loomis.*

For Gonorrhea in Females.—

℞	Zinci sulphatis	3 i
	Aluminis	3 iii.

M. Sig. Dissolve one teaspoonful of the powder in one pint of warm water and use as an injection, three times daily.—*Ringer.*

Another excellent mixture for the same purpose is the following:

℞	Creolin	m. xxx
	Ext. hydrast. Canad. fluid.	3 iiss.

M. Sig. Two teaspoonfuls in a pint of warm water, to be used as an injection, two or three times daily.—*Lutaud.*

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ORIGINAL ARTICLES.

APPENDICITIS IN RELATION TO DISEASE OF THE UTERINE ADNEXA AND PREGNANCY.¹

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THE subject of appendicitis, with its fatality and many complications, and the close relationship which it may bear to contiguous organs and structures, cannot fail to be of particular interest to this body of obstetricians and gynecologists. You will no doubt agree with me that acute appendicitis is the most common, and one of the most fatal, of all acute intra-abdominal affections, and, furthermore, that its mortality is in a great measure due to a failure to make an early diagnosis, and to the character of the treatment instituted. The position which I have held, namely, to operate as soon as the diagnosis is made, I still maintain, assuming that this is done very shortly after the onset of the attack. I know that this course is attended by the least mortality. My experience in the operative treatment of this dangerous, treacherous, and fatal disease, embraces several hundred cases, and I am prepared to make the statement that I have never seen a human life lost when operation was performed immediately following the onset of the disease. While I am aware that to discriminate between cases, and to be able to determine from the onset which are operative cases and which will recover without operation, or to be able to defer operation with absolute safety for two, three, or more days, rather than to rush in, as some put it, and remove the diseased appendix as soon as the diagnosis is made, may be more scientific, yet I know positively that this course is taken at the cost of many human lives. When, therefore, it becomes a question of following the lines of theory or of experience, which teaches practical facts and which when instituted will bring practical and favorable results, the decision permits of no choice.

The ultimate results of inflammation of this organ more than justify early operative interference. Let us consider for a moment some of the results of appendic inflammation. First and most important, because of the high mortality, is perforation of the

appendix, with general septic peritonitis; next, perforation, with localized abscess formation, which if not evacuated early produces general sepsis, a tedious convalescence, a granulating wound, and in many instances ventral hernia or fecal fistula. Appendicitis followed by a large localized abscess means necessarily the destruction of a great deal of tissue which oftentimes Nature fails to repair, to say nothing of the loss of life when it occurs in the young or feeble. I consider the formation of a localized abscess, occurring as the result of appendicitis, anything but the most fortunate culmination of the attack and for the following reasons: because the inflammation should not be allowed to reach that stage; that in the hands of the majority of operators it is an excuse to leave the appendix, believing that with the evacuation of the abscess they have accomplished all that can be expected. This practice not only offers an opportunity in too many instances for leaving behind an organ which is more liable to be the cause of subsequent and less favorable attacks, but also exposes the patient to the risk of an undiscovered secondary collection which in my experience is a frequent cause of death.

Before a body of operators, comprising the members of this Association, it would be presumptuous for me to draw a comparison between operation in the absence of, and in the presence of, pus. I may, however, bring to your attention some complications of pus-formation which I have observed. The presence of pus increases the danger of lymphatic infection. This is also true of infection through the portal system (pyelophlebitis) resulting in miliary abscess of the liver, and consequent death. The complications which may arise from an undisturbed localized appendic abscess are its rupture into the bladder, thus occasioning an enterovesical fistula; rupture into a bronchus and evacuation by way of the mouth; rupture into the ascending colon, rectum or vagina, which is not to be considered a favorable termination and does not preclude the possibility of a recurrence of the inflammation; rupture into the ureter with evacuation of pus through the bladder. A complication which is not an uncommon sequence of the formation of a localized abscess is intestinal obstruction due to adhesions which have been formed in the process of localization. Again, secondary obstruction may follow the evacuation of an abscess, due to the subsequent contraction of its walls.

¹ Read by title at the Tenth Annual Meeting of the American Association of Obstetricians and Gynecologists, Niagara Falls, New York, August 17-20, 1897.

A septic phlebitis (phlegmasia alba dolens) is not an uncommon sequence of localized abscess formation. A condition of affairs which may arise as the result of a small collection which has remained undisturbed is a cheesy degeneration of the abscess wall, involving contiguous structures in the process. When the gut has been thus included an attempt to remove the degenerated mass will frequently bring to light a perforation of the bowel, often so large as to necessitate excision, enterorrhaphy, or anastomosis. In operating for appendicitis the multiplication of the difficulties induced by pus-formation must prepare the surgeon to meet and handle any of the complications of abdominal surgery.

To recapitulate: the large mortality in appendicitis, as I have previously stated, is the result of too conservative measures in the early stage of the disease. Surgeons whose experience in the treatment of appendicitis has been large, I am sure will to a man agree with me in this statement. To be brief, I have yet to see a human life lost when in an acute attack of appendicitis the appendix has been removed within six to eight hours after the onset of the disease, while on the other hand, I regret to say that I have seen many lives lost by adopting the so-called conservative methods, namely, opium to relieve the pain, allowing the bowels to remain confined, leeches, fly-blisters, turpentine stupes, any or all of which are not only useless but harmful. I cannot impress this fact too strongly as I have seen five deaths from appendicitis in as many days, in all of which cases I am morally certain that had the appendix been removed immediately after the onset of the first pain all the patients would have recovered.

The question naturally arises, Who is largely responsible for this high mortality? Is it our teachers? Personally, I feel that it is their fault. What is the alternative? I would suggest that our professors in the different teaching institutions should witness a number of operations performed early, and I know there no longer would be the list of skeptics there is now. This, too, would be a healthful diet for the so-called surgical critic who writes articles condemning too frequent operation. The last-mentioned class is evidently wanting in experience; otherwise they could not but entertain different views.

The conditions in women which call for careful thought in differentiating between one or other of the diseases of the uterine adnexa and acute or chronic appendicitis, are the following:

1. *Acute Salpingitis*.—There frequently is a close relationship between acute catarrhal appendicitis and right-sided acute salpingitis, and the symptoms may closely resemble one another. The great points of difference, however, are the history of infection, the

slight degrees of abdominal tenderness and rigidity, the location of the pain, and the absence of vomiting, and in the case of appendicitis the pain migrating from the epigastric or peri-umbilical region to the right iliac fossa, the decided tenderness and rigidity of the lower right quadrant of the abdominal wall, suddenness of attack, accompanied by vomiting, no history of infection, and the absence of signs by vaginal examination and the pressure of a palpably enlarged appendix.

2. *Pyosalpinx and Ovarian Abscess*.—The presence in the recto-uterine cul-de-sac of an inflammatory mass in intimate relation with the uterus, which renders it partially or completely immovable, and which may be clearly outlined by vaginal, bimanual, or combined vaginal and rectal examination, together with the history of a vagino-uterine infection, and the presence of septic fever, establish the diagnosis of pyosalpinx or ovarian abscess. The essential points in the differentiation between these two affections and appendicitis are the suddenness of onset in the latter, accompanied by vomiting, and the characteristic rigidity and tenderness following general abdominal pain.

Inflammation of the right ovary may be confounded with appendicitis, as it is attended by pain, tenderness in the right iliac fossa, nausea, and fever. It is, however, always accompanied by disturbances of the uterine function, is accompanied by the characteristic ovarian pain, and is demonstrable by vaginal or bimanual examination. The tenderness is never so intense on superficial palpation as in appendicitis and is not accompanied by a perceptibly enlarged appendix.

3. *Extra-uterine Pregnancy*.—The history in these cases is usually that of partial or complete cessation of the menstrual flow for one, two, or more periods, generally accompanied by other symptoms of pregnancy, with collapse supervening upon an attack of acute abdominal pain. The pain is long-continued and paroxysmal, but not colicky. An irregular, bloody, vaginal discharge, generally lighter in color than the normal menstrual flow, and containing shreds of tissue, portions of the decidua, etc., is present. Vaginal examination will detect a tender and sensitive mass in the posterior cul-de-sac, unless the pregnancy be an abdominal one. In the majority of these cases there is a history of sterility for five or six years previous to the abnormal conception.

When the product of conception occupies the fimbriated extremity of the right tube, the points of differentiation are more difficult, owing to the close proximity of the lesion to the appendix, and to the negative result of examination *per vaginam* prior to rupture. Should the two conditions occur coinci-

dently it will be well nigh impossible to differentiate between them. The chief points to be borne in mind, however, if such is not the case, are the history and the absence of inflammatory symptoms prior to the rupture of the extra-uterine sac and the presence of inflammatory symptoms in appendicitis.

4. *Suppurating Ovarian Cyst.*—An appendic abscess and a small suppurating ovarian cyst on the right side present some symptoms in common which may give rise to difficulties in diagnosis. These symptoms are: Painful tumor in the right iliac fossa, which may be made out by vaginal, bimanual, rectal, and external examination; symptoms of septicemia; hectic temperature, and history of previous gastric and urinary irritation. The differences, however, are marked and may be distinguished by careful consideration. In ovarian cyst the onset is gradual and a history of infection may generally be elicited. The pain is constant and of a dull character; by pressure the significant "ovarian pain" may be produced, differing from the colicky and paroxysmal pain of appendicitis. The rigidity of the abdominal wall is not so marked as in appendicitis, while the tumor itself is more elastic, apparently having thinner walls and a more regular outline.

5. *Ovarian Cyst with Twisted Pedicle.*—An ovarian cyst with a twisted pedicle, gives, as a rule, a history of a slowly growing tumor, which is so frequently unaccompanied by pain that its presence has been unsuspected until the accident occurs. The onset of the acute symptoms of a cyst with a twisted pedicle is sudden and is usually caused by excessive peristalsis of the intestines or by sudden changes of the position of the body, causing the tumor to revolve. If the twisting be complete enough to shut off the circulation, the walls of the cyst will rapidly become gangrenous and the patient profoundly septic, with localized peritonitis soon becoming general. Here, again, is seen a resemblance to an attack of appendicitis with abscess formation, but the difference in shape, elasticity, the slow growth, if noted, preceding the sudden onset, the difference in the character of the pain and tenderness, and the lessened degree of rigidity should enable one of experience to distinguish between the two. If, however, for any reason it is impossible to make a differential diagnosis, I would advise the lateral incision as the one to be chosen, because appendicitis is so much more common an affection that the chances are in favor of its being the latter. If it is an ovarian cyst the lateral opening may be closed and a median incision made for its removal. The median incision for appendicitis is illogical, unwise, and in many instances will present anatomic impossibilities. Where the appendix lies behind the

cecum and observes one of the northerly directions, if adherent, it will present difficulties in the removal through the ordinary incision. It is, therefore, plain to be seen how much more difficult it would be to attempt its removal through a median opening. These difficulties are greatly enhanced when there is pus formation, and, further, the danger of peritoneal infection is greatly multiplied.

6. *Fibroid Tumor.*—Appendicitis has been confounded with a local inflammation of a portion of the broad ligament overlying an intraligamentous fibroid tumor. The main points in the differential diagnosis are the history of metrorrhagia, the presence of a growth detected upon vaginal examination, tenderness and pain, which is elicited upon abdominal palpation and is confined to the part of the wall overlying the mass.

7. *A varicose condition of the veins of the broad ligament* may simulate chronic appendicitis. A differential diagnosis should be easy to make, however, because there is an absence of inflammatory symptoms, and a characteristic dull aching pain, with nausea, which disappears when the veins are emptied, as the patient assumes the recumbent position. Again, in chronic appendicitis there is a history of one or more acute attacks, with a palpably enlarged organ and the symptoms of chronic inflammation.

8. *Painful Menstruation.*—A condition which may be misleading in the differentiation of appendicitis, is the sudden onset of pain occurring in young unmarried women of a neurotic temperament at the ushering in of the menstrual period. The onset is sudden, the pain is paroxysmal, and is accompanied by nausea. There may be more or less rigidity of the lower abdominal walls, which is most frequently bilateral. The presence and the degree of the rigidity of the abdominal walls depend upon the amount of congestion of the ovaries, and whether one or both are involved. The pain, at first paroxysmal, is most severe during the first day of the menstrual flow. After this it may become continuous, and, in some instances, last during the entire period. The tenderness and rigidity corresponds to the amount of ovarian congestion. If both ovaries are involved the tenderness will be bilateral. The pain at the onset differs, however, from that of appendicitis, being non-inflammatory and localized from the beginning, while in appendicitis there is general abdominal pain, which later becomes localized in the right iliac fossa, while marked intestinal symptoms are present.

Some women, during the climacteric, occasionally complain of symptoms resembling appendicitis. They suffer from localized pain in the right side, gastric and intestinal disturbances, and irregular

temperature. As absence of the menstrual flow often exists, some difficulty may be experienced in reaching a correct diagnosis, particularly in those cases associated with obesity. A correct diagnosis as to the condition present may be established by careful inquiry into the previous history and by local examination; the latter means will demonstrate the absence of rigidity of the abdominal walls and no palpable enlargement of the appendix. The flushes, back-aches, and mental symptoms incident to the menopause will clear up the diagnosis. The mere mention, however, of the nervous affection, with its ubiquitous symptoms, will suffice.

I recently met with a unique case which presented a typical history of acute appendicitis, followed by abscess formation. At operation the appendix was found in relation with the right ovary, to which it was bound by strong adhesions. The ovary was the seat of an abscess which had evidently been infected by the perforated appendix.

Appendicitis and Pregnancy.—Pregnancy complicating appendicitis forms one of the most serious conditions which may come under the consideration of the surgeon. Ordinarily, appendicitis involves the risk of life. Under this condition, however, the lives of both mother and child must be taken into consideration. It is claimed by some obstetricians that this (appendicitis) is an infrequent occurrence as a complication of pregnancy. While this may be the case, it is of such great importance that I believe, from its rarity, it should receive even more earnest consideration on account of the disastrous results which are likely to follow the formation of an abscess of appendic origin at any period near the completion of the term of gestation. When we consider that the gravid uterus occupies the abdomen to a large extent, and that there is a likelihood of the uterus forming a portion of the abscess-wall, involving the risk of miscarriage and subsequent shrinking in the size of the uterus, and the consequent likelihood of adhesions being torn and the escape of the contents of the abscess into the general peritoneal cavity, it is easy to imagine the risk in allowing such a condition of affairs to occur. In addition to the likelihood of breaking up adhesions following the emptying of the uterine cavity, there is equal danger of peritoneal infection. If the adhesions have become organized so that, owing to fixation, contraction of the uterus fails to occur after miscarriage, *post-partum* hemorrhage may result, the arrest of which would be attended by unusual difficulties.

Women who present the history of previous attacks of appendicitis and complain of local pains and distress in the right iliac fossa, with all the symptoms

of chronic appendicitis conjointly with pregnancy, should, in my opinion, be relieved of a chronically diseased appendix in order to avoid the likelihood of suffering from a condition of affairs as above outlined. Although in many cases the condition may not go on to the formation of pus, still the great uncertainty which hangs over chronic disease of the appendix, and the indefiniteness as to the ultimate outcome, when complicated by pregnancy, make it imperative that we should not be too conservative, and thus endanger the life of the patient.

A question may arise as to the differential diagnosis between peritonitis from a perforated appendix or ruptured appendic abscess and peritonitis resulting from endometritis following abortion, miscarriage, or labor at full term. The principal points of differentiation are the history of sudden onset, accompanied by nausea or vomiting, and pain, rigidity, and tenderness in the case of appendicitis, while in the latter there is a history of uterine infection prior to the inflammatory invasion of the peritoneal cavity, as well as an absence, early in the history of the case, of localized rigidity and tenderness, which is diffuse in purulent peritonitis.

The rupture of the appendic abscess or perforation of the appendix may be followed by a temporary cessation of the more pronounced subjective symptoms previous to general septic peritoneal infection. This may be accompanied by shock. In puerperal peritonitis the symptoms appear slowly and are progressive and without amelioration.

The symptoms of appendicitis complicating pregnancy are those common to uncomplicated appendicitis, although there may be vomiting throughout the entire period of gestation, not associated with evidences of an inflammatory condition. What is true of appendicitis in general is also true when it is associated with pregnancy. The likelihood of referred pain, not necessarily confined to the region of the right iliac fossa, is also true when complicated by pregnancy. The diagnosis is rendered more difficult when pregnancy is advanced and the abdomen is filled with the uterus and its contents. The ability to elicit rigidity of the recti muscles is marked on this account, although tenderness will be more pronounced when pus is present. The cases reported of appendicitis complicating pregnancy I believe, without exception have presented a history of previous attacks of inflammation of the organ in question.

Appendicitis, associated with or complicating pregnancy during the early months of gestation, is not as serious by far as when it occurs later. The danger of involvement of the uterine wall, as a part of the abscess wall, when such is present, is in distinct relation with the elevation of the uterus from

the pelvis. The danger of miscarriage increases also as pregnancy advances for the same reason. Changes occur in the placenta when the uterine muscle is included as a part of the abscess wall, especially if the placental attachment corresponds with that portion of the uterine wall forming a portion of the abscess wall. It has been conclusively shown in several instances that degeneration of the placenta has followed abscess formation. In one case the placenta had undergone partial calcareous change, and miscarriage followed the evacuation of the abscess. The calcification was noted after the expulsion of the after-birth.

There may be some doubt created in these cases from the fact that the patient has had disturbance of digestion, with nausea, and vomiting. This condition, however, should not be confounded with nausea and vomiting at the first onset of appendicitis, as this is associated with evidence of inflammation. A primary acute attack of appendicitis in a pregnant woman might be mistaken for an approaching miscarriage. In the latter instance, however, the symptoms are not ushered in by severe abdominal pain, and as a rule there is no nausea attending the onset of local pain.

Acute appendicitis complicating the later months of pregnancy is a far more dangerous condition to deal with. The appendix, if holding any of the southerly or easterly directions, is bound to be in relation with the uterus, and if pus be present the uterus is readily included in the mass of lymph thrown out to wall off the forming pus. Here lies the danger in appendicitis if it is allowed to go on to pus formation. If the appendix is removed before pus is formed, there is a decreased likelihood of miscarriage, and a lessened possibility of peritoneal involvement, adhesions, and peritonitis.

A serious question arises after pus has formed and the uterus is included as a part of the inner wall of the abscess cavity. We must face two important considerations: first, the likelihood of infecting the peritoneum primarily, and second, whether it is proper at the time of evacuating the abscess cavity to induce a miscarriage, or to allow Nature to take its course, and run the chance of avoiding an abortion. If we choose the former alternative and evacuate the uterus, after emptying the abscess cavity it would seem as if the surgeon would be in a position to control the possible infection of the peritoneum by the tearing loose of the adhesions to the uterine wall following the contraction of this organ, and by a proper disposition of gauze prevent infection of the cavity. If we are to choose the other alternative and leave the fetus *in utero*, then there exists a double menace to the future welfare of the patient—a probable infection of the peritoneum, a possible miscar-

riage, or the likelihood of carrying a dead child, with the attending risk of uterine infection, and the danger of septic endometritis, and peritonitis.

The salient points which I particularly wish to bring to your attention I will summarize in the closing paragraph of this paper:

The many difficulties of diagnosis between disease of the uterine adnexa, pregnancy, and appendicitis, and the probability of their co-existence in the same case, bring us face to face with the general rule that "he who opens an abdominal cavity must be prepared to meet any or all the complications which may arise in this most complex portion of the human anatomy." The first and most important point is the necessity for an early diagnosis, because the good results of an operation for appendicitis depend upon the time of operation. The danger increases in direct ratio with the progress of an attack. In women who are liable to become pregnant and who have had an attack, or attacks of appendicitis, the appendix should be taken out in order that the dangerous complication of pregnancy and appendicitis may be avoided. This is particularly true if an attack of appendicitis supervenes upon pregnancy. The latter condition does not contra-indicate operation under the circumstances, but rather, on the other hand, makes operation more imperative. Another point is one based upon a rich personal experience, covering both operative and non-operative cases. It is that the number of patients with appendicitis who become perfectly well, patients who do not suffer during the interval between attacks, and who are not subject to the certainty of future attacks, are so extremely rare that the question of curative treatment resolves itself *into the time of operation*.

THE DIAGNOSIS OF PRIMARY SARCOMA OF THE PLEURA FROM THE CELLS FOUND IN THE PLEURITIC EXUDATE.

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THE microscopic examination of the sediment of pleural and peritoneal effusions for the purpose of establishing the diagnosis of new growths of these membranes before a clinical diagnosis can be determined is a diagnostic measure but rarely instituted, if the scantiness of the literature upon the subject is to be taken as an index. Much has been done with the chemistry of these fluids, but few careful investigations have been reported of the cellular constituents in those cases in which malignant tumors of the pleura or peritoneum were present.

Such examinations have been much more frequently made of the urine, sputum, stomach-contents, feces,

and vaginal discharges in the hope of establishing at the bedside the diagnosis of new growth, and not a few cases have been reported in which a correct diagnosis was made from the presence of tumor-cells or tumor-tissue in these excretions and secretions. Though in these days, when exploratory aspiration of almost every case of pleural or peritoneal effusion is made as a matter of course, and when the centrifugating-machine is so frequently utilized in the examination of the sediment, few cases of malignant growth diagnosed in this way have been reported. This seems strange when one considers the large number of cases of ascites due to peritoneal metastases in ovarian and gastric carcinoma, and the frequent cases of pleuritic effusion due to secondary carcinoma of the pleura following primary tumors of the mammary gland, etc.

It is evident that the possibility of diagnosing new growths from the microscopic examination of effusions before a successful clinical diagnosis can be made would be a very important advance. The question then stands, To what extent is it possible, from the examination of the cellular elements of effusions, to establish the diagnosis of new growth of pleura or peritoneum?

The usual examination of the sediment of these fluids is confined to the direct microscopic examination of the fresh specimen, or to the examination of stained preparations for bacteria. In the majority of cases the search is limited to leucocytes and red blood-cells; and more emphasis is laid upon these than upon the character of other cells which may happen to be present. In addition to the blood-corpuscles, note is also made of endothelial cells, fat drops, fatty acid crystals, Charcot-Leyden crystals, cholesterol, pigment, fibrin threads, micro-organisms, and foreign material.

The presence of large numbers of large polymorphous cells, having numerous vacuoles or containing fat droplets, has led to the assumption in many cases that these cells were carcinoma cells, but from the fact that the endothelial cells in effusions exhibit such diversity of size and shape, and show also a similar degree of vacuolation and fatty degeneration, some investigators have declared it impossible to diagnose with certainty the existence of a new growth unless bits of tissue showing definite structure can be found.

Quincke¹ endeavored to establish the principle that carcinoma cells can be distinguished from endothelial cells by their size, their number, their grouping into masses, and perhaps by their glycogen reaction. Later Rieder,² after a careful study of carcinoma cells

in peritoneal and pleuritic fluids, concluded that the most important differential point between them and endothelial cells is in the large number of mitoses, especially asymmetrical division forms, which are found in the cells of tumors and not at all, or to a very slight degree in endothelial cells. The finding of many cells showing division figures he believed to speak conclusively for malignant growth. Neelsen, quoted by Rieder in the same article, diagnosed carcinoma of the kidney from bits of tissue discharged in the urine, and which contained cells showing many asymmetrical mitoses.

Since Rieder's article, I have not been able to find any work bearing upon this point. The tumors which have been diagnosed by a microscopic examination of cells found in effusions have been in all cases carcinoma, or, as in Rieder's case, atypical growths (*sarcoma carcinomatosum*), probably a mixed tumor arising from an ovarian teratoma. I have not been able to find any statement of a typical sarcoma of the peritoneal or pleural cavity, diagnosed from the cells found in the effusion, but I have not been fortunate enough to secure all of the literature on primary endothelioma of the pleura, so that my search must be looked upon as incomplete. The evident rarity of such cases makes the report of the one which came under my observation some time ago very important because of its bearing upon the question of diagnosis. As far as I know, it is the only case in which sarcoma of the pleura has been correctly diagnosed by an examination of the pleuritic exudate.

I am not at liberty to give the full clinical history of the case, my connection with it being limited to the examination of the effusion and the material obtained at the autopsy. The most important facts are as follows:

X., a German, male, about forty-five years of age, gave an indefinite history of dyspnea, pain in the right side of the thorax, cough, and progressive weakness. He also had irregular fever. The exact duration of these symptoms could not be ascertained because of the clouded mental condition of the patient when first seen.

The physical examination showed increased fulness of the right side of the thorax, with entire absence of movement. There was slight bulging in the fourth and fifth intercostal spaces between the nipple and sternal lines on the right side. There was a weak apex-beat in the left anterior axillary line in the fifth interspace. Vocal fremitus was absent over the right side. There was no friction fremitus. On percussion, dullness was found below the fourth rib on the right, rising to the level of the second rib when in a sitting position. Above this, there was dull tympanitic resonance. Over the area of dullness there was no breath-sounds and no adventitious sounds. Above the second rib there were faint blowing breath

¹ *Deutsch. Archiv. f. Klin. Med.*, vol. xxx.

² *Ibid.*, vol. liv.

sounds. The voice-sounds were only faintly transmitted above the second rib.

A diagnosis of pleurisy with effusion was made, the patient was aspirated, and the fluid sent to the pathologic laboratory for examination.

Pleuritic Exudate.—The fluid was brownish-red in color, with many yellowish or grayish flakes which settled quickly after agitation. The fluid was thick, but the amount obtained was not sufficient for the estimation of its specific gravity. On standing, fibrin was formed. The fluid coagulated solidly on boiling. The fresh sediment was examined, numerous stains and reagents being applied. Cover-glass preparations were made and a portion of the sediment was hardened for future examination.

The examination of the sediment, stained by allowing a drop of dilute methylene-blue solution to run under the cover-glass, showed the field to be full of spindle-cells of about the same shape and size, mostly single, but lying also in groups. There were numerous red blood-cells, leucocytes (mostly lymphocytes), fibrin threads, blood-pigment, and an abundance of fine granules, supposed to be cell *débris*. The leucocytes were not present in such numbers as to admit of the fluid being called purulent. Endothelial cells were present in only a very small number. They showed various degrees of vacuolation.

From the great number of spindle-cells present, the diagnosis of small spindle-cell sarcoma was made. The diagnostic points considered were the number of the cells and their character. The one alternative set against this diagnosis was a pleuritic effusion containing large numbers of fibroblasts, but the regular size and shape of the cells were opposed to this view.

The patient gradually became worse. A rapidly progressing anemia and weakness, with constant delirium, were the most marked symptoms up to the time of death. The bulging on the right side between the nipple and sternal lines became more prominent before death.

The *post-mortem* examination was held four hours after death. The subject was very anemic and much emaciated. The pathologic conditions were confined to the thorax. The right half of the thoracic cavity was filled with a thick brownish-red effusion containing many large flakes and stringy masses. To these, blood-clots were attached. There were also large blood-clots floating in the fluid. The entire surface of the mediastinal pleura and of the anterior parietal pleura as far as the anterior axillary line was covered by a velvety growth; in some places the surface of the growth was covered by long strings of fibrin and blood-clot, firmly adherent to the tumor mass. In many areas the tumor itself consisted of

long strings extending out into the pleuritic cavity. The greatest thickness of the growth (about three inches) was at the level of the fourth and fifth intercostal spaces between the right nipple and sternal lines, corresponding to the area of prominence in the chest-wall. The right lung was completely atelectatic; the visceral pleural was covered with fibrin, but there were no evidences of a new growth. The heart was pushed to the left, the right edge being at the left sternal line. The left lung and pleura were normal, as were also the pericardium and heart. No metastases were found.

Tumor.—The tumor was mottled red and grayish-white. It was so soft that it could easily be crumbled between the fingers, and so fragile that it could hardly be cut without falling to pieces. The surface was uniform, homogeneous, without stroma, but rich in large blood-vessels, having very thin walls. There were numerous hemorrhagic areas, also areas of necrosis, grayish-yellow in color. In the stringy areas, the blood-vessels were surrounded by the grayish-white tissue of the tumor, giving to the naked eye the appearance of a perivascular growth.

Scrapings were made from the freshly cut surface of the tumor, and it was found to consist of medium-sized spindle-cells like those found in the effusion. The fluid obtained from the thoracic cavity was very rich in the same cells, so rich that it was not necessary to collect the sediment for examination. The specific gravity of the fluid was not taken.

Pieces of the tumor were hardened in alcohol and Müller's fluid. Sections were prepared from these, and the growth was found to consist of spindle-cells grouped about the large but thin-walled blood-vessels. Only a single layer of endothelium separated the blood from the cells. That the tumor-cells arose from the endothelium there can be no doubt; they were crowded more closely just around the endothelium, and here the nuclei stained more deeply than those away from the vessels. In specimens hardened in alcohol, dividing endothelial cells were seen, and in some cases the cells grew into the lumen, forming buds on the inner wall of the vessels. In other cases, free masses of cells were found in the vessels. In the stringy areas covering the surface of the growth, all stages of development of the tumor tissue could be found, from the small capillary growing out into the fibrin with only a single layer of endothelium forming its walls and with no tumor tissue about it, up to the large blood-vessel surrounded by a large cylindric mass of cells. Throughout the tumor the structure was essentially perivascular, so that the tumor consisted of cellular cylinders surrounding the blood-vessels. Mitoses were abundant throughout; for the most part they were symmetrical.

From its histologic structure the tumor should be styled a spindle-celled hemangiosarcoma; from its origin it should be classed with the endotheliomata.

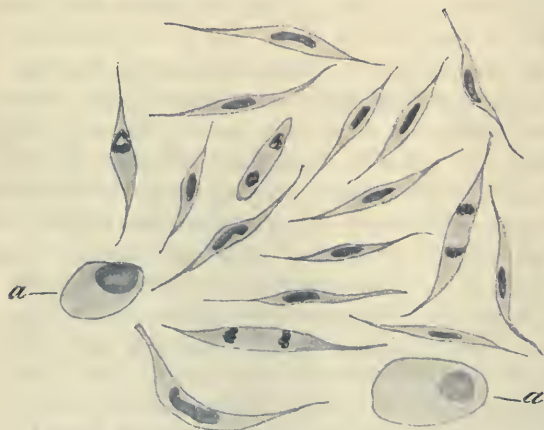
The hardened cover-glass preparations of the sediment were not examined thoroughly until some time afterward. These were stained in hemalum and examined with an oil-immersion lens. The finer structure of the cells was then carefully studied. The cells were spindle-shaped with rather long and slender polar processes which did not branch as is commonly the case with the spindle-cells found in inflammatory exudates. The nucleus stained rather heavily; was oval, as a rule, but in many cells was slightly curved. The chromatin was very abundant, but had a very simple structure. Numerous mitoses were found, but in all cases they were regular and symmetrical. They showed all stages of development.

As a rule, the cells were found singly, but groups were very common. They did not contain vacuoles, neither was any vacuolation of the nucleus observed. The rather abundant protoplasm was finely granular. The epithelioid appearance of the nucleus so common to fibroblasts was not seen. Numerous necrotic cells were found, the protoplasm being more coarsely granular and the nucleus staining very poorly or not at all.

The pleural endothelial cells were relatively scanty. They were very irregular in size and shape, and showed various degrees of vacuolation. They presented no characteristics differing from the same cells found in ordinary pleuritic effusions.

In Fig. 1 the character and relative proportion of the cellular elements (blood-cells excepted) of the effusion in this case are shown.

FIG. 1.

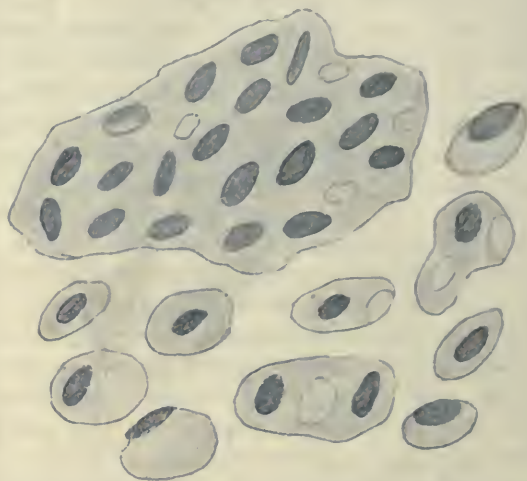


Cells from effusion in primary sarcoma of the pleura. (a) Endothelial cells, all the others are tumor-cells, some showing cell division. (One-twelfth oil-immersion lens; ocular No. 2.)

Since the examination of this case I have made a study of the cells found in the sediment of the exudate in a large number of cases of diseased conditions

of serous membranes—pleura, peritoneum, and pericardium. A description and comparison of the cells found under different conditions may be very valu-

FIG. 2.



Endothelial cells from sediment of effusion in early stage of acute serous pleurisy. (One-twelfth oil-immersion lens; ocular No. 2.)

able in itself and of aid in establishing a basis for diagnosis, if such be possible. The specimens were taken from cases in which the diagnosis was confirmed *post-mortem*; in some instances the fluid was obtained directly from the body-cavities, in others by puncture previous to death and also at the *post-mortem* examination. The cells were examined fresh, and fixed cover-glass preparations were made according to the method usually employed for the examination of blood. The cleaned cover-glasses were spread with a thin film of the sediment, allowed to dry in the air for a few minutes, and then fixed in a mixture of equal parts of absolute alcohol and ether (one to two hours in the fixing fluid is sufficient). After fixing, the covers were dried in the air and stained at convenience. Hemalum or hematoxylin was the stains used most frequently.

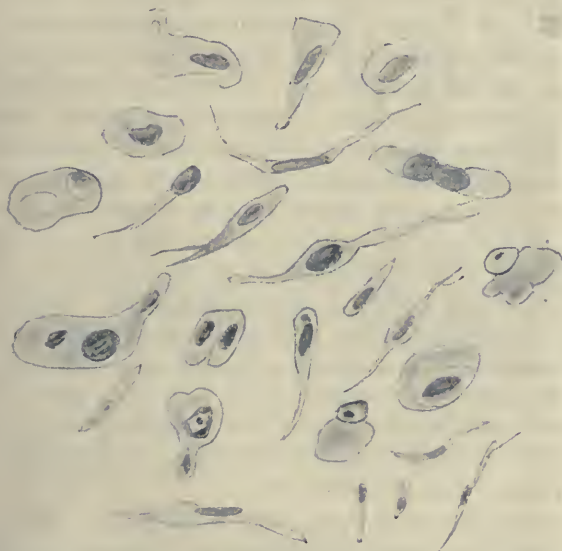
Acute Serous Pleurisy (Fig. 2).—The fluid was obtained in this case on the second day of the disease. It was clear, pale yellow, and contained numerous small whitish particles. These, when examined microscopically, were found to be masses of endothelial cells. From the large number of these desquamated groups of cells the pleurisy might be styled as desquamative. It is, however, the rule to find these in the very early stages of pleurisy. In these groups of cells the cell-membranes could not be made out. The cells were also found in great numbers isolated or in smaller groups of two or three.

As seen in Fig. 2, the cells were large, irregularly oval or round, and had an oval nucleus which stained less heavily than the nuclei of leucocytes or fibro-

blasts. They were for the most part vacuolated, the vacuoles being due to hydropic degeneration and not to fatty change. Some of the nuclei were also vacuolated. In many cases the vacuole occupied the entire cell, with the exception of the nucleus. In some cases the nuclei were partially extruded from the cell. Though the polymorphic character of the cells was very striking, no spindle forms were found in the early stage of simple pleurisy, though in the later stages they become abundant. No mitotic forms were observed.

Acute Fibrinous Pleurisy (Fig. 3).—The effusion of both early and late stages of fibrinous pleurisy was examined. In all cases the fluid was cloudy, light yellow, and contained numerous flakes and strings of fibrin. The pleuræ were covered by a thick layer of stringy fibrin. In both early and late

FIG. 3.



Cells from the sediment of acute fibrinous pleurisy, third week. Endothelial cells and various forms of fibroblasts. (One-twelfth oil-immersion lens; ocular No. 2.)

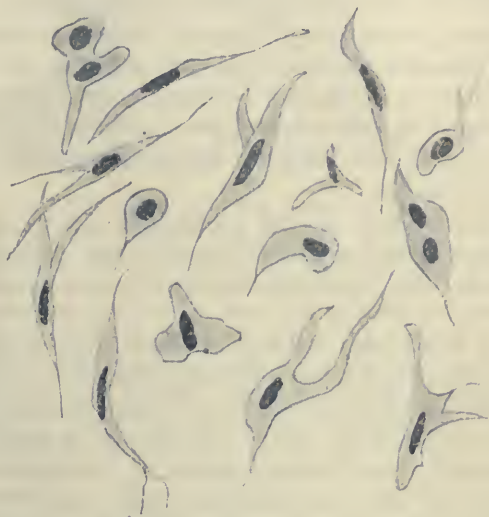
stages the sediment contained vacuolated endothelial cells and numerous irregular spindle-cells, having in many cases finely branched polar processes. These cells had nuclei which stained more deeply than the endothelial cells, but in some cases they were epithelioid in character. Some of the nuclei of these irregular cells were vacuolated. In the early stage the endothelial cells predominated, but in the older cases of fibrinous pleurisy the spindle forms were much more numerous. They are to be looked upon, I think without doubt, as fibroblasts. No mitoses were found in these cells.

Tuberculous Pleurisy.—The exudate was obtained *post-mortem*. It was fibrinous, and similar in character to that found in simple fibrinous pleurisy. The sediment of the fluid differed in no respect from that

shown in Fig. 3, being made up of endothelial cells and fibroblasts. No mitoses were found.

Acute Fibrinous Pericarditis (Fig. 4).—The case examined was seen *post-mortem*, death having oc-

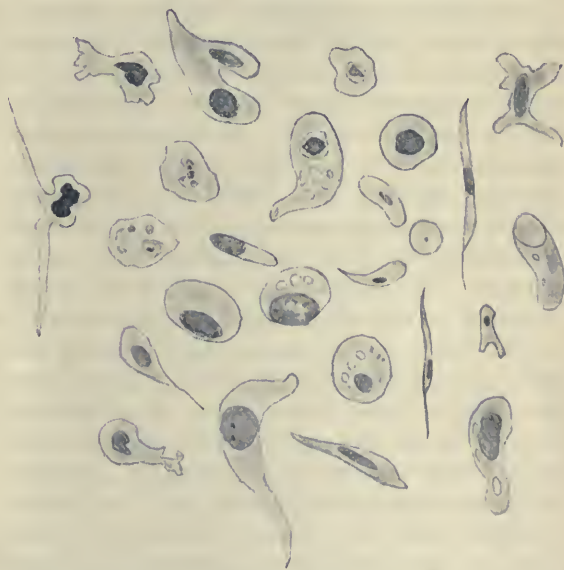
FIG. 4.



Cells, probably fibroblasts wholly, from the sediment of pericardial fluid in the third week of acute fibrinous pericarditis. (One-twelfth oil-immersion lens; ocular No. 2.)

curred during the third week. Both layers of the pericardium were covered by a thick layer of fibrin; in many places there were fresh adhesions which were easily separated by the fingers. There was a small quantity of thick grayish fluid between the

FIG. 5.



Cells from scraping of normal pleura. Endothelial cells, with a few connective-tissue cells from basement structure. (One-twelfth oil-immersion lens; ocular No. 2.)

layers. On examination, no endothelial cells were found in this fluid, but numerous fibroblastic forms. These were much more branching than the cells

found in the pleuritic exudates. No mitoses were found.

Scraping from Normal Pleura (Fig. 5).—For the sake of comparison, the cells obtained by scrapings from normal pleuræ were also studied. The surface of the membrane was gently scraped with the edge of a sharp knife so as not to loosen the cells of the basement structure. As seen in Fig. 5, the cells obtained in this manner are almost wholly characteristic polymorphic endothelial cells; the few spindle-cells found were doubtless from the basement connective tissue.

After a study of the sediment of many cases of effusion into peritoneal, pleural, and pericardial cavities, the following points seem to me to be worthy of emphasis:

1. In all cases of this kind, when fluid can be obtained by exploratory puncture, cover-glass preparations should be made by fixing in absolute alcohol and ether as described above. This should be done immediately after the withdrawal of the fluid from the body in order that the mitoses may be preserved.

2. In early stages of simple pleurisy the sediment contains endothelial cells and no fibroblasts. The endothelial cells may be desquamated in large pieces.

3. In fibrinous pleurisy, tuberculous or septic, the sediment contains, in addition to endothelial cells, numerous fibroblastic forms. In later stages, when adhesions are forming, the endothelial cells may be entirely absent, and only fibroblasts be found.

4. In the diagnosis of sarcoma of serous cavities, the character and number of the cells and the presence of numerous mitoses are the points upon which the diagnosis must be based. It is, of course, evident that the quickly growing and soft forms of sarcomata are the ones most apt to lead to the presence of cells in the fluid. The tendency of all sarcomata to break down after reaching a certain growth makes it extremely likely that in most cases free cells will be found. The diagnosis of spindle-celled sarcoma is easy, from the occurrence of large numbers of spindle-cells of similar size and shape, showing fewer branching processes than fibroblasts, and containing more mitoses. In the round-cell forms, the tumor cells are to be distinguished from the endothelial cells by their size, character of nucleus, and the relation of the nucleus to the protoplasm. The presence of mitotic forms will again be the most important point; in the small round-cell sarcoma, these are not so easily seen. The greatest difficulty will be in the differentiation of the cells of a polymorphous-celled sarcoma from the fibroblastic forms found in fibrinous exudates. Aside from the general character of cell and nucleus, the presence of division forms must in

all cases be looked upon as being the most important point.

In conclusion, therefore, the presence of numerous cell-division forms in the cells of the sediment of serous exudates may be taken as strong (perhaps conclusive) evidence that the effusion is due to the presence of a new growth, inasmuch as mitoses are but rarely found in the cells of purely inflammatory exudates.

CERTAIN SOURCES OF NEUROSES IN WOMEN.¹

BY EGBERT H. GRANDIN, M.D.,
OF NEW YORK.

THERE are few studies in medicine more interesting than that of the neuroses. It appears to me that I cannot do better than consider, from a clinical standpoint, certain forms of disease subsequent to which neuroses occur in women, tracing possibly obvious and yet frequently overlooked sources of their manifestation. The term neuroses is vague, and means in reality that the user is uncertain as to what he desires to express. It too often is a mere cloak for ignorance, and yet I trust to prove to you that at times this is the result of either faulty examination, or of the fact that the sufferer has consulted a specialist who is not broad enough to look beyond the organs which it is his custom to observe, forgetful of the truism that rarely is one organ of the body diseased without reflex manifestations, and inversely that symptoms pointing to one organ in reality may emanate from another. With this brief preface, I will endeavor to exemplify the subject by relating, with comment, instances of neuroses which have passed under my observation.

CASE I.—A few years ago a gentleman brought his wife to me, and stated, that, although he had been married for a number of months, sexual commerce with his wife had been impossible. Intromission was accomplished, but beyond this such intense pain was evoked that he was obliged to desist. The woman was intensely neurotic, complaining of pain in almost every portion of the body. The pelvic organs were normal; ovarian prolapse, which I had expected to find, did not exist. Had the examination ended here I would have been obliged to confess inability to relieve a condition which was causing much marital infelicity. It has been my custom, however, never to stop short after examination of the uterus and its appendages. It was not necessary to seek beyond the vesical neck, for here I found a fissure, evidently the cause of the trouble. Dilatation and the application of phenic acid completed the cure.

Even, as in man pain at the tip of the penis is a frequent symptom of bladder disease, so will the

¹ Read before the Medical Society of the County of New York, September 27, 1897. Discussion on page 510.

practitioner find, on careful sifting of the symptom-complex presented by his female patients, that signs apparently referable to the pelvic organs will find explanation in fissure of the vesical sphincter.

It is probably unnecessary at this day to refer to the manifold neurotic symptoms which may emanate from preputial adhesions of the penis and clitoris. I have elsewhere recorded some interesting examples of the effects of this condition, and I desire here simply to call renewed attention to the fact, that insignificant as the clitoris appears, it exercises a vast influence upon the organism. It is my routine practice never to consider an examination complete unless the condition of this organ has been investigated, and further still, it is the exception rather than the rule not to find adhesions concealing a greater or less collection of smegma, and, of course, acting as a constant irritant. Many an instance of masturbation, nymphomania, and of bedwetting will find explanation in this condition. I have elsewhere entered a plea for the careful routine examination of the clitoris shortly after birth, feeling assured, that if adhesions are found and relieved, neurotic and pseudo-epileptic children will diminish in number.

An instance of the effect of clitoridal adhesions in the causation of reflex symptoms is the following:

CASE II.—A lady, aged 35 years, consulted me for the relief of an intolerable pruritus of the vagina. Urinary examination negative; endometritis did not exist, and yet, she was driven almost to distraction, having employed nearly every remedy without avail. The prepuce of the clitoris was found to be firmly adherent, and underneath its base was a collection of acrid smegma. Thorough separation of the adhesions effected a cure.

In this instance a good result would long before have been obtained had I not overlooked the clitoris. This is the case, seen many years since, which taught me the lesson that this organ is worthy of the most careful scrutiny.

I am inclined to think that the rôle of a diseased sphincter ani muscle in the production of neuroses in women is not fully appreciated. I am satisfied that many reflex symptoms may be explained by ulceration just at the sphincter. Recalling the anatomy of the parts, in particular the manner in which the fibers of this muscle inosculate, it is at once clear why irritation at one point may give rise to symptoms suggestive of disease at another. In the course of time constant irritation of the sphincter ani may cause congestion of the uterus of such a degree, that the hasty diagnostician may conclude that possibly curetting, or even extirpation of the appendages may be necessary for a cure of the aggravated symptomatology. All the more reason, then, why the examina-

tion of women should never be deemed complete unless the anus and rectum have been explored as well as the pelvic organs proper. The symptoms referable to the uterus, tubes or ovaries, as the result of long-continued irritation, may be so pronounced as to mislead both patient and examiner, and still, as has happened to me and, I presume, to others, the causal factor of the symptomatology lies not in the uterus, tubes or ovaries, but in the rectum.

Of a number of cases, the essentials of the following have been selected to illustrate the point:

CASE III.—An intensely neurotic woman consulted me after two years of married life for the relief of the following symptoms: Intense dysmenorrhea; dyspareunia of such an aggravated type that the sexual act had never been performed, and ovarian pain, chiefly on the left side. The spasm of the hymen was so intense that I was unable to make a vaginal examination without anesthesia, but upon the employment of an anesthetic it disappeared. The uterus and adnexa were normal as far as could be determined. Inspection of the rectum revealed a deep ulcer at the sphincter. Dilation of the sphincter, incision and cauterization of the ulcer relieved the symptoms within two weeks. The patient has continued well, and to-day is the mother of two children.

If, in this case, the anal examination had been omitted, I would doubtless have been tempted to thoroughly dilate and curette the uterus, and, notwithstanding, would have failed to give relief. This is simply an example of many cases which I have observed, and together they justify an earnest plea for a careful rectal examination before the diagnosis is considered complete.

Attention is next invited to the coccyx—relatively a frequent source of neuroses. This bone is peculiarly susceptible to injury in women; should conception occur at an age past twenty-five, and should the child be proportionately large or the pelvis small, or should instrumental delivery be necessary, it is likely that the coccyx will be injured. It may be possible to secure a history of a fall on the end of the spine. Neither a fall nor childbirth may cause actual disease, but fracture of the bone, even though caries does not result, quite frequently gives rise to almost constant pressure on the nerve filaments it contains, and hence the occurrence of obscure reflex symptoms. Remembering the anatomic distribution of the sphincter ani muscle, it is apparent how irritation of the coccyx is readily reflected to the anus and vulva. Investigation of my records reveals seven cases in which I have removed the coccyx, either because of the presence of actual disease, or because fracture apparently accounted for reflex nervous phenomena not otherwise to be understood. In

not one instance have I been disappointed in the result, and further, in every case, irrespective of actual caries, neuroses were prominent in the symptomatology.

As an instance—a very marked one—the following is cited :

CASE IV.—A woman sought relief from pelvic symptoms of a vague character. She also presented prominent signs of spinal irritability, even the slightest touch causing an attack of hysteria, which she claimed was due to the spinal pain. Vaginal examination revealed nothing abnormal, and both rectum and bladder appeared healthy. During the manipulations I touched the coccyx, causing the most aggravated attack of hysteria I have ever witnessed. Inquiry elicited the fact that this bone had at one time been fractured. It was my opinion that the symptoms might depend upon an abnormal condition of the coccyx, at any rate, extirpation was worth trying in the absence of a lesion of more definite character. At the operation caries was found to exist, and the bone was embedded in a mass of adhesions. The result was magical—all the reflex symptoms promptly disappeared.

In another instance the symptoms apparently were ovarian, and in still another dyspareunia was the principal complaint. In both cases removal of the fractured or diseased coccyx was followed by cure. The lesson is that it may be necessary to investigate the condition of this bone before a satisfactory explanation of the symptomatology is discoverable. One or two points in regard to the technic of the operation for extirpation of the coccyx are offered : Drainage is unnecessary, even though many textbooks direct the contrary. Let the assistant press the bone firmly backward by means of a finger in the rectum, and the operator will have little difficulty in exposing it. After removal, if a large Hagedorn needle is employed, the sutures may be made to travel entirely around the wound, thus securing close apposition of the surfaces when the sutures are tied. The operation having been aseptic there is no reason for drainage.

The next and last source of neuroses which will be considered is the tubes and ovaries, and here, as it were, the dark continent is entered. So far, operations of a simple type have been considered. Ground is now approached where, if operation be performed for the relief of neuroses, it must be with the utmost circumspection and with a full understanding on the part of those most interested that the result is problematic, because operation is empiric. I am not speaking of operations performed in the presence of definite pathologic lesions of the tubes and ovaries. I have in mind those instances where careful examination fails to reveal disease, and yet where the symptomatology points, apparently unerringly, to

the uterus, tubes and ovaries as causal factors for which no other explanation may be found. Many and ghastly were the failures fifteen years ago when it was customary more than it is to-day to remove these organs, and yet, on the other hand, the results secured through empiric operating of this type are very brilliant. When it is considered that after all there is little information of a definite character in regard to that function which assists in differentiating woman from man—I refer to menstruation, its cause and purpose—little wonder that it is dangerous to assume that a nervous manifestation, even though aggravated, may depend upon this function. I have observed menstruation reappear with regularity of rhythm in three instances when I am positive that both tubes and ovaries had been completely removed by me, and in one a secondary abdominal section enabled me to be certain that a third ovary did not exist. Under the circumstances it seems pardonable to term menstruation the most obscure of all feminine neuroses. Paradoxically too, the cessation of this function—as at menopause—is accompanied by aggravated neurotic symptoms—hot flashes, cold sweats, melancholia with suicidal tendencies, etc. Why then, in order to cure a supposed neurosis, should we be tempted to cause menstruation to cease? unless that supreme paradox “like cures like” be accepted. Still, in my experience, as doubtless in that of every operator, empiric removal of the tubes and ovaries has at times wrought wondrous changes for the better. I will give in outline two histories bearing upon this point:

CASE V.—A woman was brought to me from a retreat for the insane, where she had been placed by a neurologist. She was about thirty years of age and the mother of two children. The symptoms were severe melancholia, erotomania, and suicidal tendency. Evidences of endometritis and pelvic peritonitis were found. The husband was informed that, while it was impossible to state definitely that the condition depended upon the findings, I would be willing to curette the uterus and remove the appendages if the moral support of a consultant could be secured. Receiving this, the operation was performed; convalescence was uneventful, and the woman has enjoyed continued good health, two years having passed since the appendages were removed. The adnexa was not markedly diseased, the lumina of the tubes being patent and the ovaries only enlarged to a degree usual in multiparæ.

CASE VI.—A young girl, aged eighteen years, during her menstrual life had been subject to attacks of hystero-epilepsy, which had not yielded to treatment. Examination revealed an infantile condition of the pelvic organs. The attacks were aggravated during the menstrual periods, and were so violent as to require anesthesia for their control. Drugs having failed, and since the attacks were usually coinci-

dent with a menstrual period, extirpation of the appendages was advised, but with a clear understanding that the operation would be empiric, and that no hope of cure could be offered. The operation occurred nearly three years ago. The attacks at once diminished, both in frequency and severity, and none have occurred during the past two years.

In this patient the tubes and ovaries were not diseased, but together with the uterus were undeveloped, and this condition may have been the causal factor in the production of hysterio-epilepsy. At any rate had we possessed any means for causing the development of infantile organs, I would have tested them before emasculating the patient.

In this connection I will give the notes of a case possessing great interest, and in which a similar operation failed :

CASE VII.—A woman past thirty years of age came to me for an opinion as to the advisability of extirpation of the adnexa for the cure of epilepsy. The appendages, though markedly enlarged, were freely movable. No data could be secured indicating augmentation of the symptoms during the menstrual periods, but a number of years previously during pregnancy, when, of course, menstruation was in abeyance, the seizures were very infrequent. Nothing was promised as regards a cure, indeed entire skepticism was expressed as to the result, but the operation was requested on the ground that everything else had been tested and that this might succeed. Convalescence was uneventful, and for a few months after the operation the attacks diminished in frequency. The patient began to have a pseudo-menstrual flux, and the seizure recurred as before the operation.

This patient did not have a third ovary, as the technic employed—ligation of the ovarian arteries in sections and removal of the entire tube—eliminated such a possibility as a factor in the production of the recurrent menstrual flux. This was, unquestionably, a case of essential epilepsy, and the result secured is the one constantly obtained after operations upon the pelvic organs for the relief of this disease.

Certain of the neuroses observed in women have been sketched, at times insignificant as regards lesion, though major as regards symptoms. Time forbids reference to the obstetric neuroses and those accompanying lesions of the cervix. Aside from laying stress on certain factors in the production of neuroses, I have entered a plea for the more careful examination of the body as a whole before attention is centered upon a special set of organs. While the wide specialization of medicine which has marked the age in which most of us have lived has redounded greatly to the advance of knowledge and the relief of suffering, it is an open question if there does not exist an overspecialization, so to speak, too many immature

specialists, with the result that often the wrong organs are treated or too many are unavailingly treated in turn. You are all aware how hard hobbies are ridden. Oftentimes the eyes, nose, tubes, and ovaries are each investigated with failure, and the case remains uncured until it reaches the man of broader mind, reared, perhaps, in an older school, who administers a dose of calomel, and cures the hitherto intractable neurosis. The deduction is, that the best specialist is he who for years has been a general practitioner.

THE ETIOLOGY AND TREATMENT OF ACUTE NEPHRITIS IN CHILDREN.

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AN experience covering a number of years in the treatment of diseases of children has led to a belief that the generally accepted idea of the acute infectious fevers being mainly responsible for the occurrence of acute nephritis in children is an erroneous one; that a great number of such cases do occur in which it is impossible to trace a history of acute infection. To record these instances of nephritis as "causative factor unknown," when, to my mind, it is possible to explain the cause of the disease, seems hardly a logical course.

Among the causes may be cited: (1) Improper food and hygienic environment; (2) hereditary syphilis and the inherited tendency to tuberculous disease; (3) inherited weakness of the kidneys. That improper food and hygiene play a prominent part may be assumed from the fact that such affections are much more common among the poor than among the well-to-do. Though the children of the former are more often exposed to infection, the relative number of cases of infective disease occurring in the two classes is not sufficient to account for the difference; while, on the other hand, the dietetic and hygienic conditions are woefully dissimilar. Examples of the affection under consideration are comparatively rare in the rural districts, where the food and environments are better and the parents more healthy. Under such circumstances cases occur in about equal proportion in the two classes mentioned. These patients have usually presented a history of repeated attacks of diarrhea, and the fact that the urine frequently contains an excess of indican indicates fermentative processes in the intestinal canal. That abnormal alimentary changes often stand in the relation of cause to effect in the nephritis of children seems to be proved from the fact, that such patients do better on a properly regulated diet than on any other form of

treatment, the dropsy disappearing, the bowels becoming regular and the urine normal.

The changes in the intestinal contents give rise to a toxin or toxins which act injuriously upon the kidneys, just as do the toxins of the infective fevers. Thompson explains this action by attributing to the poison an effect upon the general health followed by a change in the density of the blood, which in turn modifies the rate of osmosis so that albumin is filtered through the kidneys. A solution of albumin injected into the rectum of a dog will pass almost unaltered through the kidneys. It appears to be a rational conclusion that if an infant is placed upon an albuminous diet, which, of course, it cannot assimilate, that an albuminuria, continuing during the employment of such a diet, will occur.

According to Yeo, the ingestion of too great a quantity of albuminous material necessitates the excretion by the kidneys of so large an amount of nitrogenous waste that a temporary functional hyperemia of the organs in question is excited, and this leads to a slight leakage of albumin from the blood. Thus it is seen, that given an improper diet to begin with, there exists the first factor in a chain of events which may ultimately lead to organic disease of the kidneys.

The victim of inherited syphilis or of the tuberculous diathesis is apt to develop nephritis. This is especially so among the negroes—a fact well-known to Southern physicians—and particularly applies to those having an urban environment. Both of these diseases act in a manner analogous to that of the infectious fevers. Other cases have come under my observation to which no causative factor could be assigned; but the family history would show one or two near relatives who died of nephritis. Some persons certainly evidence a marked tendency to albuminuria from slight dietetic errors, which in time may be followed by structural lesions of the kidney, and in children, on account of the age and an undeveloped digestive system, this condition could easily be brought about.

The treatment, of course, depends upon the cause. Should the history elicit evidence of the presence of the toxin of an infective fever, the aim should be to eliminate the poison from the system. This is accomplished by promoting physiologic action of the kidneys, and for this purpose our most effective means is a properly regulated diet. The same principles are true in the case of syphilis or tuberculosis, although in the former, of course, the specific treatment of the disease would be applied as well. Milk, modified to suit the exigencies of the case, is the best means we have for the accomplishment of the purpose. Heart stimulants and diuretics are sometimes

necessary, though administered as a routine practice they do more harm than good.

I append a brief account of a few cases, and, although my efforts have not always been successful, I attribute the failures not to incorrect methods, but to the impossibility of carrying out the treatment thoroughly in many instances, and to the fact that the disease had often passed to an advanced stage before the patient came under observation.

CASE I.—W. J., negro, aged two years and nine months. Family history good; no history of infectious fever. The examination revealed general edema. The urine was supposed to be diminished, but it was impossible to get total amount; specific gravity, 1028; albumin present; urea, six grains to one ounce; indican present, though not in excess. A diet was ordered, which consisted of modified milk, fruits, gruel, etc. The child gradually improved, and finally passed from observation, when things were doubtless allowed to continue as before. Called to see the child two months later. Coma complete. Administered digitalis and nitroglycerin hypodermically; no reaction. Child died within a few hours.

CASE II.—R. H., female, light mulatto, aged twelve years. Had been under treatment by various physicians for about two months. General dropsy. Almost constant headache. Visual abnormalities, such as floating particles in the air, etc. Mother died from nephritis and father from tuberculosis; no history of infectious fever. Urine: Amount, twenty ounces; urea, seven grains to one ounce; albumin present in large quantities. Patient very anemic. Medication, cod-liver oil and syrup of the iodid of iron. Slight improvement. Occasional convulsions, and finally death ensued during an attack.

CASE III.—H. S., negro, female, aged eight months. History of repeated attacks of diarrhea, and symptoms of syphilis. General edema present. The mother was ordered to nurse the child, and inunctions of mercury followed by iodid of potassium were prescribed. Child improved steadily, and at present appears to be perfectly well.

On consulting Quain's "Dictionary of Medicine," I find that views identical with mine are held by Stokins and Sir George Johnson. These, while detracting from the originality of the ideas presented, coming from such eminent authority add greatly to the weight of the argument.

Donation to Veterinary College.—Ex-Governor Flower has donated \$5000 to Cornell University to purchase books for the Veterinary College library.

Suicide in New York.—During the year 1896 there were 384 suicides in New York City, of which 295 were men and 89 women. Shooting constituted the favorite method; 58 swallowed carbolic acid; 54 hanged themselves, and 35 inhaled illuminating gas.

CLINICAL MEMORANDA.

A CASE OF GASTRIC ULCER, TERMINATING IN HEMORRHAGE AND DEATH.

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MR. J. C., aged eighty-four years, an unusually well-preserved and apparently healthy old man, gave the following history: He had always been very temperate in the use of alcohol, but had been a habitual smoker. As a young man he enjoyed excellent health, with the exception of the occurrence of what he called recurrent bilious attacks. These attacks consisted of gastric pain followed by nausea and vomiting, and, later, by diarrhea; they occurred at irregular intervals, and sometimes several months elapsed between them. During the intervals, as a rule, he was free from any stomach symptoms; his appetite was good and his bowels regular. About thirty years ago he suffered from his first gastric hemorrhage, which was said to be profuse, and was so ill that death seemed imminent, but he recovered perfectly. Between the date of the first hemorrhage and January of the present year he had three or four recurrences of the hemorrhage, but the attacks were not so severe as the first. On January 30th, another hemorrhage occurred, being preceded a day or two by abdominal pain and fever, but unaccompanied by nausea.

I saw him immediately after this attack, and calculated that he vomited at least a pint of coffee-colored blood. The hemorrhage was followed by large tarry stools. He became very wild and delirious, so that on the night of January 31st, he had to be held in bed. The delirium subsided after a few days and he soon was up and about again, taking a walk every day as usual, and despite an appearance of anemia and a considerable loss of flesh, seemed fairly well. On April 23d, he had another profuse hemorrhage, and afterward became very anemic and weak, although he remained entirely rational. On April 26th another hemorrhage occurred. He never entirely rallied from this, his pulse remaining very feeble, his lips bloodless, and complexion ashy. He suffered from "air-hunger," and tossed his arms about, but remained conscious and knew that he was dying. Death occurred on the afternoon of April 26th. He was conscious until within a few minutes of the end.

A *post-mortem* examination was made by Dr. C. T. Dercum and myself. We found all the tissues very anemic. The stomach was small and there were no adhesions or perforation. On removing the viscus and opening it along the lesser curvature, we found that it contained about half a pint of coffee-colored blood. On the anterior wall of the lesser curvature, near the cardiac end of the stomach, there was one open ulcer, containing the remains of a small thrombosed vessel, and two cicatrices. The cicatrices were very irregular in shape, the greatest diameter being about two centimeters. The ulcer was about the size of a 10-cent piece, sharply defined, but very shallow, extending only to the submucous structure.

The stomach wall in this locality was thickened, showing that there had been considerable inflammatory infiltration. The wall at the pyloric end along the greater curvature was very thin. The veins on the anterior wall were large and tortuous.

The intestines were entirely normal in appearance, with the exception of about twelve inches of the lower part of the colon, which was studded with little sac-like protrusions filled with inspissated blood, giving the external surface of the bowel the appearance of being beaded with black glands. The caliber of the gut at this point was extremely narrow, and the canal was filled with liquid blood. The liver, kidneys, spleen, and bladder were all healthy in appearance.

This case is of interest because of the advanced age of the patient, and the fact that he had typical symptoms of gastric ulcer thirty years ago, three or four recurrent attacks, and during the intervals enjoyed good health. It would seem, therefore, that the ulcers healed after each attack. At eighty-four years of age he was unusually well-preserved, being vigorous, both mentally and physically. The case is also unusual, because death was caused directly by the gastric hemorrhage. Ewald ("Diseases of the Stomach") says that immediately fatal cases of gastric hemorrhage are comparatively rare. The absence of disease in any other organ and of complications is also interesting.

A CASE OF INFANTILE MALARIAL FEVER, WITH GRAVE ANEMIA.

By JOHN S. BILLINGS, JR., M.D.,
OF NEW YORK.

THE following case was observed in the wards of the Johns Hopkins Hospital, Baltimore: The patient, a female, aged ten months, of American parentage, was admitted to the hospital October 20, 1893. The family history was negative, with the exception that all but one member had had malarial fever, contracted at the same time and place—an exceedingly malarious district in Maryland. In all, five members of the family had developed the disease. Until the present illness the child (whose case is here reported) had always been strong and well. The mother stated that the patient had been having daily attacks of fever with slight sweating at night, but no chills. The febrile paroxysms came on late in the afternoon and lasted about one hour. The child lost flesh and strength steadily from the first. She had had a little diarrhea but no vomiting; appetite fairly good; slept well. At the beginning of the illness a general eruption of dark blue spots and patches (purpuric?) appeared, which became confluent and persisted until a week previous to admission after which they gradually faded.

The following is an abstract of the memoranda made at the bedside by Professor Osler: "Child appears wasted; skin very pale; lips and mucous membranes generally almost colorless. Head somewhat rachitic in appearance. The skin is loose all over the body and hangs in ridges and folds everywhere, except over the hands and feet. These are much swollen and pit deeply on pressure, the skin over them being tense and glazed. The skin over

the abdomen shows evidence of old ecchymoses. Splenic dulness not increased but the sharp border of this organ may be felt about half an inch below the costal margin."

An examination of the blood revealed the presence of two sets of malarial organisms of the tertian type, giving rise to the double tertian or quotidian variety of fever. The organisms of one set occupied only one-quarter of the red corpuscle, and contained a few grains of almost immobile, brownish pigment. Some of the organisms of this set were without pigment, and gave the appearance of oval or irregularly shaped clear spaces in the red corpuscle. They were ameboid, changing shape and position at will. The other set occupied almost the whole of the red corpuscle, and had the appearance of circular, highly refractive bodies filled with grains of brownish-black pigment in constant, dancing motion. Several full-grown organisms, *i.e.*, occupying the whole of a corpuscle, were observed, and one matured or segmenting form. In the latter the pigment was gathered into a dense mass at the center of the organism and had segmented, dividing into fourteen or sixteen small, round, highly refractive bodies. Upon the bursting of the matured organism, these small hyaline bodies find their way into the red corpuscles, there to begin their life cycle anew.

Medication consisted of the administration of sulphate of quinin in quarter-grain doses every four hours.

On October 31st, the temperature rose to 101° F. at 8 P.M., falling to normal by 4 A.M., the following day. It remained normal until the morning of November 3d, when there was a sudden rise to 104° F., again reaching normal by 2 A.M. on November 4th, the paroxysm continuing during twenty hours. November 4th, the dose of quinin was increased to one grain repeated every four hours. The succeeding day the temperature rose sharply to 103° F., and on November 7th, it reached 101° F., after which it remained normal. There was practically no sweating during these attacks.

Daily examination of the blood showed the presence of the organism described above at various stages of development according to the time of examination. Their number grew gradually less, however, and they were not found after November 8th.

The child did well for the first few days, but on November 4th, appeared very ill, and had an attack of vomiting, also curds appeared in the stools. The diet had previously consisted of two parts milk and one part lime-water. The proportions of milk and lime-water were made half and half, following which vomiting did not again occur, the curds disappeared from the stools, and the child continuing to steadily improve.

An analysis of the urine made during the illness showed it to be cloudy, but with no sediment; specific gravity, 1.003; very faint trace of albumen. Microscopic examination revealed the presence of leucocytes and squamous epithelium.

The quinin was discontinued November 19th, and Fowler's solution, 1 grain, three times daily, was substituted. The patient was discharged on December 4th. She was again seen on December 15th, when she appeared plump, strong, and healthy.

The first blood-count, October 22d, indicated the following condition: Red corpuscles, 1,381,000 per c.mm.; leucocytes, 18,500 per c.mm.; hemoglobin, twenty-five per cent. (v. Fleischl). The fresh specimen showed moderate variations from the normal in the shape and size of the red corpuscle, poikilo and schuzocytosis. Hardened and stained specimens evidenced the same changes in the red corpuscles. Quite a large number of nucleated red cells (twenty in one specimen) were observed. These were all, with one exception, normoblasts; *i.e.*, though the corpuscle is of normal size, it possesses a deeply staining nucleus, occupying only one-sixth to one-quarter of the area of the corpuscle. The exception noted was a megaloblast; a corpuscle twice the size of the normal red cell with a relatively large, palely staining nucleus. The hemoglobin of many of the red corpuscles, of about one-third of the normoblasts, and of the megaloblast was polychromatophilic; *i.e.*, instead of showing an affinity for acid stains, as is characteristic of normal hemoglobin, it takes a neutral stain best. No abnormal leucocytes were noted. A differential count of 1000 leucocytes showed a marked increase in the number of so-called polynuclear neutrophils (92.1 per cent.). This would be expected in such a well-marked leucocytosis as was present in this case. The condition of the blood steadily improved from the date of admission until November 9th. The number of red corpuscles increased, the number of nucleated red corpuscles grew constantly less, and poikilo and schuzocytosis became less marked. On the date mentioned the condition was not so good, but one week later the state of affairs was again much improved, leucocytosis having entirely disappeared. The increase in the number of red corpuscles and in the percentage of hemoglobin present progressed hand in hand with the improvement in the condition of the child, and upon the date of the last examination the blood was practically normal. red corpuscles, 4,870,000 per c.mm.; leucocytes, 5700; hemoglobin eighty-nine per cent.

The interesting point in the condition of the blood was the presence of nucleated red corpuscles in relatively large numbers. The occurrence of grave anemia during and following malarial fevers has, of course, been noted by many observers. It is rare, however, that the number of red corpuscles falls as low as it did in the present case. The presence of nucleated red cells and polychromatophiles was an evidence of an increased activity on the part of the blood-forming organs, with resultant new formation. Such an indication of regeneration warranted a favorable prognosis. In a case of purpura hemorrhagica reported by the writer in *The Johns Hopkins Hospital Bulletin*, vol. v, p. 65, the anemia was more marked than in the present case, yet there was a total absence of nucleated red corpuscles, showing a lack of regenerative effort, and warranting an unfavorable prognosis which was justified by a fatal termination. While the presence of nucleated red cells is indicative of a severe grade of anemia, their absence in cases where the red corpuscles are below 1,500,000 per c.mm., is of bad omen.

The occurrence of a typical megaloblast in a case of secondary anemia, such as this, sustains the view of sev-

eral authorities that these corpuscles are not pathognomonic of pernicious anemia. In fact, it is now generally recognized, that any secondary anemia, if severe enough, may show the same blood-changes that were formerly supposed to be characteristic of pernicious anemia.

The well-marked leucocytosis observed was probably due to anemia. Malarial fever without anemia is unaccompanied by an increase in the number of leucocytes; but the writer has elsewhere reported instances of marked leucocytosis occurring during post-malarial anemia.

MEDICAL PROGRESS.

New Mexico as a Health-Resort for Consumptives.—CAUTHORN (*Medical Sentinel*, August, 1897) directs attention to the advantages of New Mexico as an ideal locality for consumptives. The South Atlantic States and California show a relative humidity of the air and a rainfall—one or both—which is entirely too marked for patients suffering from this disease. The Adirondacks and Colorado are subject to intense cold, a harshness of climate, and a violence of weather changes at certain seasons which are certainly objectionable. On the other hand, between Santa Fé on the north, and Tucson and El Paso on the south, the desired conditions of altitude, dryness, and mildness suited to every consumptive who is not hopelessly affected, may be found during every month of the year. New Mexico will probably be chosen as the site for a sanatorium for tuberculous seamen of the Marine Hospital Service, if the plan to provide such an institution is carried out. There are at present more than 1100 of these patients in the various marine hospitals of the country and the bringing together of so large a number of consumptives, under such favorable conditions, will afford opportunity for the most valuable conclusions regarding the treatment of this disease.

The Fate of Microbes in Granulation Tissue.—AFANASJEW (*Centralbl. für Chir.*, August 14, 1897), in order to determine exactly the power of granulation tissue to protect the organism from bacterial infection, experimented upon quadrupeds with the bacillus of anthrax, and upon birds with the vibrio Metschnikowi. He found: (1) No general infection takes place through healthy granulations. (2) After withstanding this test animals are usually protected from an infection through a fresh wound. (3) The destruction of the bacteria was demonstrable microscopically; but in this process phagocytosis does not seem to play a chief part. (4) Pure cultures taken from the granulations twelve hours after inoculation seemed to be weakened.

Adenoids Removed with a Fatal Result.—SCHMIEGELOW (*Centralbl. für Chir.*, August 14, 1897) mentions an accident which happened in the practice of another surgeon, and one who has many times performed, without bad result, the simple operation which brought on a fatal hemorrhage in the instance mentioned. The patient, a boy aged twelve, had adenoids, and except that the lad was of scrofulous diathesis, the case was absolutely uncompli-

cated. No anesthetic was used. While the operator was scraping the right wall of the nasopharynx with a Gottstein's ring-knife, there was a sudden gush of blood which proved uncontrollable, and the patient died within a few minutes. At autopsy it was found that the internal carotid artery had been ruptured by the manipulations.

Anasin, a New Local Anesthetic.—VAMOSSY (*Centralbl. für Chir.*, August 14, 1897) describes a new local anesthetic to which he gives the name of Anasin, and for which he claims distinct advantages over cocain, in that it may be sterilized, does not change with age, and has absolutely no irritant properties, nor general toxic effects. This drug which is an acetone-chloroform, is used in a one-per-cent. watery solution, the effects of which are about equal to those of a two-per-cent. cocain solution. In a number of tests upon the lower animals and also upon man the writer was not disappointed.

Hernia into the Intersigmoid Fossa.—LAMBRET (*L'Echo Méd. du Nord.*, August 22, 1897) reports a case of hernia of the intersigmoid fossa, a variety of the greatest rarity. Herniæ have been mentioned as occurring in the foramen of Winslow, in the retroduodenal fossæ, and in the retrocecal fossæ, but as far as is known this is the third case of hernia into the intersigmoid fossa. This fossa which exists in more than eighty per cent. of all individuals and may therefore be considered normal, is concealed by the sigmoid meso-colon. In order that the intestinal coils may become engaged in it, it is necessary that the mesentery should be straightened, and this occurs only when the sigmoid is drawn upward into the abdomen. Under these conditions, which are the same as those brought about in order to expose the fossa, its entrance is open, and the small intestine may, therefore, become prolapsed into the cavity.

The Conditions Found More Than Two Years after Ligation of the Large Vessels of One Side of the Neck.—THOMAS (*British Med. Jour.*, August 21, 1897) reports the conditions found in the case of a man sixty-five years old, who two and one-quarter years previously had cut the internal, external, and anterior jugular veins, as well as the common carotid artery, in an attempt at suicide. (See THE MEDICAL NEWS, January 18, 1896, p. 76.) At the time hemorrhage was controlled by clamping and ligation, secondary hemorrhage occurring, it became necessary to ligate the internal and external carotids. The patient recovered and resumed his occupation as a house-painter. This he followed for nearly two years when he came under observation again on account of severe cough and pain in the right chest. The temperature was high and expectoration copious. Rapid failure took place and death ensued.

Upon *post-mortem* examination, the blood-vessels forming the circle of Willis appeared normal. The last half-inch of the internal carotid artery was hollow, while the portion in the cavernous groove was represented by a fibrous cord. Upon the left side, the sternomastoid muscle was entirely replaced by cicatricial tissue. The common carotid trunk was small and terminated abruptly five

inches from the arch of the aorta in a mass of scar-tissue, there mingling with the cut ends of the pneumogastric, sympathetic, and some cervical nerves. (The phrenic nerve was normal.) Above this fusion, nothing but the two nerves (vagus and sympathetic) and a small artery could be found. This artery, not so large as a normal facial, came down from above and gave off the small facial, lingual, and superior thyroid, and was the sole representative of the external carotid. No trace of the internal carotid or of the internal jugular as far as the base of the skull could be found. The inferior thyroid artery was smaller on this side, but the left vertebral was half as large again as its fellow. This, in fact, appeared to be the only special provision made for collateral circulation. The deep cervical artery was much smaller on this side. The left lung was normal, and therefore had not suffered from interference with the pneumogastric and sympathetic nerve. Upon the right side the common carotid artery seemed slightly larger than normal, but the superior thyroid, the lingual, the facial, and the inferior thyroid were apparently not enlarged. In the right lung some pathologic changes, with a collection of pus, had caused death.

The conditions present illustrate how little reliance can be placed upon the theoretic collateral circulation laid down in the text-books, based on ordinary anatomic anastomosis, for with the exception of the enlarged left vertebral artery and some little enlargement of the right common carotid, all the other arteries were not only no larger, but were actually smaller; even the deep cervical artery was considerably smaller than its fellow of the opposite side.

Perforating Ulcer of the Duodenum.—DARRAS (*Gaz. heb. de Méd. et de Chir.*, August 22, 1897) shows that the perforation of the duodenum as a result of simple ulceration—the commonest complication in this affection, and one which often gives rise to the first and last marked symptoms—occurs usually in the anterior wall. Consequently it is followed by a general peritonitis. It is necessary to differentiate between this peritonitis and that occurring as a result of gastric and appendic perforation. The points of distinction to be remembered are: The previous history of the patient, the circumstances under which perforation takes place, and the exact site of the first pain. Perforation of the duodenum is more frequent in men than in women, while the reverse is true of perforation of the stomach. The latter more often runs a latent course than the former. Vomiting is more constant in connection with perforation of the duodenum.

The only treatment is surgical, and to succeed this must be prompt and thorough. If possible the opening should be sutured. Failing in this, it is to be packed about with gauze. Post-operative treatment is important and should not be neglected.

THERAPEUTIC NOTES.

Sulfonal as an Antisudorific in Phthisis.—COMBEMALE and DESCHECMOCKER (*La Méd. Mod.*, September 11, 1897) have obtained very good results from the use of

sulfonal in the night-sweats of phthisis. In one patient the sweats disappeared after three doses, while in others they became limited to a portion of the body, usually the head, and in others, though remaining general, lost a severe character. In most of the patients to whom the remedy was administered there was a persistent action for a number of days after its use was interrupted. No serious symptom attended its employment. In one instance there was a mild intoxication following a two-weeks' exhibition of the drug, which disappeared when it was discontinued. The dose was generally from 15 to 30 grains at bedtime or a little before, and this was continued daily for two weeks.

Treatment of Melancholia.—In discussing the treatment of cases of melancholia, PRITCHARD, *New York Polyclinic*, says that if the domestic situation can be controlled by the family physician, the patient should most emphatically be treated at home. Nearly all such patients are appreciatively cognizant of their surroundings, and hence great harm is done by incarceration and association in an institution with others who are insane. In treating these patients at home, two conditions should be demanded by the attending physician, positively and imperatively: First, absolute control over the patient's personal and domestic life; and, second, the constant presence of an attendant, preferably one who has had special training. As a rule, the patient should be isolated from the rest of the family, leaving the personal influence and domination of the physician and nurse free from interference. The patient's room should be changed in both location and furnishings. In the debilitated cases partial enforced rest should be obtained by requiring the patient to lie abed until ten, eleven, or twelve o'clock in the morning. The diet should be nutritious and quite sufficient. If through delusions, or in an effort to commit suicide in this way, the patient refuses to eat, enforced feeding should be resorted to by rectum or mouth, or if resistance is excessive, by means of a catheter introduced through the nose.

The drug treatment resolves itself into three indications: (1) The relief of insomnia; (2) the correction of visceral derangement and disturbed secretions; and (3) the relief of psychic pain. For insomnia the author prefers trional above all other drugs, and says that it is free from injurious or disagreeable effects, and is more certainly reliable than any other. The dose should be from 10 to 20 grains, in water, shortly before retiring. It may be combined with an equal quantity of sodium or potassium bromid. It does not seem to lose its hypnotic action even after prolonged continuance, nor does it tend to establish any drug habit. Occasionally the sleep induced from a full dose is alarmingly prolonged, but this is a rare idiosyncrasy of no harmful significance. He calls attention to the importance of removing auto-infection of the gastro-intestinal tract by the administration of laxatives (cascara sagrada, decimal doses of calomel, etc.) and intestinal antiseptics (bismuth subgallate, salol, etc.), and of relieving psychic pain by opium, in the form of the aqueous extract, in doses of $\frac{1}{8}$ to $\frac{1}{2}$ of a grain three or four times daily.

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THE YELLOW-FEVER EPIDEMIC.

IN regard to the origin of the present epidemic of yellow fever in the South, sanitary authorities are divided in their opinions. One theory, which is strongly advocated, is that it has been brought to this country from external sources, and is ascribed to Cuban refugees who evaded quarantine at Ocean Springs. None of those refugees, however, so far as known, has died of the disease or even been attacked by it. Certain it is that the first case which was clearly recognized as yellow fever was that of a gentleman from Louisville, Ky., who had been staying at a boarding-house in Ocean Springs, kept by a family in sympathy with the Cubans to such an extent that refugees found welcome and hospitality, and were permitted to hold clandestine meetings there.

In opposition to this theory is the position taken by the *Sanitarian*, which maintains that the yellow-fever germ is a denizen of the Gulf States; that it thrives there in greater or less luxuriance in accordance with the varying climatic changes from season to season; that a prolonged siege of hot weather during which there is a prevailing temperature of about 80° F., especially when accompanied by great humidity,

develops this germ in a virulent form and gives it wide distribution. Such was the climatic condition which preceded the present epidemic. Moreover, it was preceded, as have been previous similar epidemics, by an invasion of dengue or malarial fever, showing that the atmospheric conditions were such as to favor the development of noxious germs. Furthermore, this authority points out that in addition to this atmospheric condition, favorable soil for its widespread development was afforded these germs by an indifference on the part of the inhabitants to sanitary precautions due to the prevailing confidence in quarantine regulations.

Whatever may have been the origin of the disease, it is an accepted fact that its propagation is favored by unsanitary conditions, and the logical steps to be taken in the present emergency are to place the towns and villages within the influence of this *contagium* in a sanitary condition with the utmost despatch. Frosts and freezing weather cannot be had for the asking, nor can they be bought for a price. But the thorough cleansing of houses and streets, is a rational means of relief which may be undertaken at once. Mob violence and shotgun quarantine are disgraceful. The wheels of industry and the channels of trade are blocked. This is the opportunity to teach the gospel of cleanliness, and practically demonstrate its truth long before the uncertain frost can come.

MEDICAL TEACHING.

SINCE writing the article upon this subject, which recently appeared in these columns, our attention has been called to one written by Dr. Montgomery A. Crockett in the *Educational Review* for September. This author develops the subject along lines similar to those followed by us, but his article is more elaborate in detail and is so full of suggestion that it is worthy the careful attention of those interested in medical teaching.

He insists that the methods now employed in the best secular schools are also applicable to medical pedagogy, and advances the suggestion that the future medical student is now receiving his preparatory education along modern lines; that upon reaching the professional school he will not be content to be subjected to methods of teaching long deemed obsolete. "The object of medical education is the development of power in a special field,

and this object is not accomplished merely by the presentation of a large number of facts. Reform in medical teaching does not mean that medicine will be made easy; it means the adoption of methods by which every particle of mental energy expended is realized by the student in the shape of increased power." The author arraigns the medical curriculum of to-day as subvertant of the order in which the mind most easily acquires knowledge. "Instead of stimulating mental activity at the outset by beginning at the point of greatest interest, it wearies the mind and interposes the resistance of the least attractive subjects. Instead of aiming to give the student an impetus which will carry him over the dry details, it applies friction when it should be getting up speed; it adds a handicap just as the student steps upon the race-course of medical education."

From the standpoint of the subject-matter alone, the medical curriculum is sufficiently logical; but from the standpoint of the man who hopes to acquire an efficient education, the arrangement of subjects is presented in an inverse order. The two great principles upon which modern education rests are the necessity of arousing interest in the mind of the student and the correlation by the instructor of the facts which he desires to impart. In accordance with this theory the development of mental power is kept in mind as well as the capacity of acquiring an endless number and variety of facts; and at the same time the method of presentation makes easy the assimilation of these facts, and their retention in the memory. In outlining the application of the new curriculum, the author insists that the first-year student shall take up the work at the point of greatest interest, *i.e.*, the clinic; and that when interest has been aroused by the clinical picture of disease the mind is in a condition to absorb easily, logically, and permanently, the facts of anatomy, physiology, pathology, and therapeutics, which naturally group themselves around the disease under discussion. This assumes that the professor or instructor is intimately conversant not only with the group of phenomena presented clinically in the case but also with the underlying facts.

At the present time clinical teaching is reserved for the senior year, and in many colleges the first-year students are debarred even the privilege of being present, so that the suggestion that the first-year

student shall begin his education with the clinic will strike those who have been giving didactic lectures for the last fifteen or twenty years as quite preposterous. But it must be borne in mind that the presence of the patient in the clinic is for the purpose of arousing interest, and, as Dr. Crockett suggests, this is a legitimate end, as the first step in the process of education. To be more specific, let us suppose that a class of first-year students is to be instructed in the physiology and anatomy of the lungs. Nothing can certainly arouse the students' interest in this subject so thoroughly, and at the same time so appropriately, as the clinical picture presented, let us say, by a case of pneumonia. The history of the case is given; the signs and symptoms of the disease are presented, and the question arises: What is the cause of these symptoms and signs? The answer involves an explanation of the physiology and the anatomy of the lungs, and leads up to an elaboration of all the processes of health and disease in these organs. In this illustration the application of the great principles involved in the acquisition of knowledge have been presented; first, the arousal and stimulation of interest, and, second, the proper correlation of the facts necessary to an understanding of the case. The hour is spent in a great object lesson, replete with interest and fruitful of results. If the allotted time is not sufficient the subject may be continued at a following lecture. The probabilities are, however, that interest will be so thoroughly aroused that the student will not wait for the following lecture, but will gratify his curiosity and interest by consulting whatever authorities may be accessible.

The presentation of the less interesting facts of anatomy may be elaborated in an equally attractive manner, the details of which will suggest themselves to the thoughtful mind. No accessory of teaching is of greater importance than freehand blackboard drawing. Colored charts and illustrations have a place, but for holding the attention of the student, can never be compared to freehand drawing on the blackboard, which keeps pace with the development of the subject. Another means of whipping up mental activity is by a series of direct questions, calling indiscriminately for responses to questions, reviewing the points already explained, and going from one to another until the correct answer is obtained. This brings before the students facts already

presented and places the mind in an attitude of receptivity for what may follow, at the same time it informs the instructor whether he has been successful in presenting the subject. In this way each lecture may be made a mental gymnastic in which every one present participates, not through fear of the mark he will receive, nor through dread of the final examination, but because of the interest aroused. The successful instructor thus develops the faculty of putting the class on its mettle, so to speak, making the mind work throughout the hour up to the limit of its power. Thus not only are facts permanently lodged in the mind, but mental power is developed and facts in anticipation of those already explained may be elicited by nicely adjusted questions correlated to what has already been explained.

Dr. Crockett makes a strong plea for the special training of men for the work of medical education. The objection so frequently made that the physician cannot afford to give so much time to educational work is tersely answered by the author when he says: "This objection constitutes the reproach of medical teaching, for it means that a man is willing to accept a place in the medical school and then knowingly give the student a poor article for his money. Such a man has no business to be a teacher, and the medical school would be better off without him; he probably is keeping out a better man, and, while posing as a martyr, is sacrificing educational interests for the sake of personal prestige. Anyone who knows more than his hearers can fill a lecturer's place, but the proper conduct of a recitation requires ability, application, and skill; the modern recitation offers a field worthy of the best intellects."

ECHOES AND NEWS.

New Instrument for Making Brain Sections.—A microtome for making sections of the entire human brain is being constructed by Messrs. Bausch and Lomb. It is expected that this instrument will make large sections of great thinness and accuracy.

Professor von Esmarch.—Professor von Esmarch of Kiel, recently celebrated his silver wedding with his second wife. He is seventy-four years of age, and his wife was one of his patients, Princess Henrietta of Schleswig-Holstein, aunt of the German Empress.

Dr. Newborn Resigns.—Dr. A. D. Newborn, of the United States Marine Hospital Service, who for seven years has been detailed as Medical Examiner of Immi-

grants at the port of New York, has resigned his position in order to continue his studies at London, Paris, and Heidelberg.

Antiseptic Road-Watering.—The necessity for antiseptic street-sprinkling is being agitated in England. Perman-ganate of potash has been used for this purpose but in solutions so weak as to be ineffectual. It is suggested that a powerful germicide such as corrosive sublimate be employed.

School Commissioners Oppose Vaccination.—It is reported that the Catholic Board of School Commissioners of Montreal, Quebec, has refused to comply with the order of the provincial board of health requiring it to refuse admittance to its schools to children without vaccination certificates. The city, however, will station officers at all Catholic schools to vaccinate the children.

New Order for Midwives.—Steps are being taken in Vienna to ensure the better instruction of midwives. An order for examination has been issued by the Minister of Education which is to take effect at once. All midwives who have already passed the examination of 1881 are allowed a year's grace for preparation before presenting themselves for re-examination.

Prevention of the Spread of Phthisis.—A society with the above object has been formed in Hanover, Germany. It is to be hoped that it will meet with the success it deserves. The society will endeavor to attain its object by the dissemination of information by word and writing, and for this purpose has issued a brochure with the following inspiring name: "Up to the Fight against Consumption!"

A Diphtheritic Cat.—The health authorities of the Oranges, New Jersey, are in pursuit of a cat said to be suffering from diphtheria. The sick animal strayed into a home where two pet cats were kept. These soon after showed signs of illness which was pronounced by the health officer to be diphtheria, and they were at once killed. Meanwhile the cat which caused all the trouble has disappeared.

Home for the Chicago Medical Society.—After an existence of forty-five years, the Chicago Medical Society has established a permanent home in the Stewart Building, where sufficient space has been rented to provide for a meeting-hall, reading-room and library, committee-rooms, and cloak-rooms. The society has a membership of nearly eight hundred and is the largest local medical society in the United States.

Army Examining Boards.—A board of officers has been appointed to meet at Headquarters, Department of Colorado, Denver, Col., on Monday, October 18, 1897, for examination for promotion of officers of the Medical Department. On the same day a similar examining board will meet at Headquarters, Department of Dakota, St. Paul, Minn., and on Monday, October 25, 1897, at Headquarters, Department of California, San Francisco, Cal.

Heart Failure from Over-Training.—A medical student of the New York University is in a serious condition at Fordham Hospital as a result of over-training. The young man, who is twenty-four years of age and has a record as a runner and pole-vaulter, has been training very hard for the fall games. The other day he lost consciousness in the street and was sent to the hospital, where he now lies completely prostrated.

Entertainment for Charity.—The concert and theatrical performance which are to be given at the opening of the Hotel Astoria, at New York, on November 1st, will benefit several hospitals and charitable institutions. The receipts will be divided among the Saturday and Sunday Woman's Auxillary Hospital, Loomis Sanitarium for Consumptives, Mothers' and Babies' Hospital, Babies' ward of the Post-Graduate Hospital, and two day nurseries.

Health Reports.—The following statistics, concerning smallpox, yellow fever, cholera, and plague, have been received in the office of the Supervising Surgeon-General of the United States Marine Hospital Service during the week ending October 9, 1897:

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Alco, Ala.....	October 8.....	1	..
Mobile, ".....	October 1-8.....	4	..
New Orleans, La.....	October 1-8.....	277	22
Biloxi, Miss.....	October 1-8.....	111	5
Clinton, ".....	To date (October 8)....	10	1
Edwards, ".....	October 1-8.....	118	11
Henderson's Pt., ".....	October 7.....	3	..
McHenry, ".....	October 1-5.....	2	..
Nitta Yuma, ".....	October 3-8.....	9	..
Ocean Springs, ".....	October 1-6.....	..	..
Scranton, ".....	October 1-8.....	68	2

YELLOW FEVER—FOREIGN.

Para, Brazil.....	September 11-18.....	..	3
Cardenas, Cuba.....	September 11-25.....	..	5
Matanzas, ".....	September 22-29.....	..	3
Santiago, ".....	September 18-25.....	10	..
Kingston, Jamaica.....	August 28-September 18.	5	4
Mazatlan, Mexico.....	September 25-October 2.	..	9
Panama, U. S. Col.....	September 13-23.....	1	1

CHOLERA—FOREIGN.

Bombay, India.....	September 7.....	..	37
Calcutta, ".....	August 21-28.....	..	5
Madras, ".....	August 28-September 2..	..	21
Osaka and Hiogo, Japan..	August 28-September 4..	2	1

PLAGUE—FOREIGN.

Bombay, India.....	September 1-7.....	..	33
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SMALLPOX—UNITED STATES.

Bessemer, Ala.....	September 25-October 2.	1	..
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SMALLPOX—FOREIGN.

Prague, Bohemia.....	September 11-18.....	2	..
Montreal, Canada.....	October 1-6.....	1	..
Alexandria, Egypt.....	August 13-26.....	..	1
Cairo, ".....	August 13-26.....	..	2
Sheffield, England.....	September 11-18.....	1	..
Calcutta, India.....	August 21-28.....	..	1
Madras, ".....	August 28-September 3.	..	2
Glasgow, Scotland.....	September 11-18.....	..	2
Barcelona, Spain.....	July 1-31.....	..	26
Madrid, ".....	September 7-14.....	..	2
Moscow, Russia.....	September 4-11.....	1	..
Warsaw, ".....	September 11-18.....	..	5

Dr. Wiseman Probably Insane.—Dr. William Wiseman, a graduate of Heidelberg University and for a long time a practising physician in Pennsylvania, was recently adjudged insane by a lunacy commission at Binghamton, N. Y. He has shown signs of insanity for the last eighteen months, and recently disappeared from his home. He was found hidden in a hovel, five feet by seven, in the little settlement of Liberty, Tioga County. He will probably be committed to the State Hospital.

Yellow-Fever Notes.—It is not generally known that Sanarelli has himself suffered from yellow fever. During the summer of 1896, while studying the disease on the Island of Flores, where it was very prevalent and where he made numerous autopsies, he was smitten with the fever, from which he recovered in due time.

It is reported that the local physicians of Nitta Yuma, Louisiana, have refused to treat yellow-fever cases.

According to the daily papers, an attempt was made by the panic-stricken inhabitants of McHenry, Mississippi, to lynch a man whom they accused of evading quarantine.

The New Orleans members of the Louisiana Legislature have been asked to pledge themselves to ratify any act introduced at the next session appropriating the amount of money which will have to be raised now to continue the fight against yellow fever. The funds of the Board of Health are exhausted and relief must come from the State, as it is useless to look to the city for assistance because its funds are completely tied up by suits now pending.

Passed Assistant-Surgeon Bratton, of the United States Marine Hospital Service, who has been on duty at Sabine Pass, Texas, fell through the hatch of a vessel he was inspecting and was so badly injured that he died on the following day. He was a son of General J. D. Bratton of South Carolina. At the outbreak of yellow fever in the South, he volunteered for service in the infected districts.

The first case of yellow fever of the present epidemic occurred at Ocean Springs, Mississippi, in a boarding-house where the meetings of several Cuban refugees took place. It is said that these Cuban refugees, eluding the quarantine officers, escaped from ships lying in the harbor and reached Ocean Springs by means of cat-boats.

The Medical Department of the Tulane University of Louisiana has given notice that in consequence of yellow fever and resulting quarantines, the opening of its winter session is postponed from October 14th to November 11th. Students entering after cessation of danger from infection, will be credited with a full course.

Thirty-eight new cases of yellow fever were reported in New Orleans on the 6th inst. This is the largest number of new cases reported in one day, and is probably due to the warm weather which has prevailed.

The Mayor of New York has received a telegram from the Acting Mayor of Edwards, Mississippi, saying that financial aid is badly needed for fever sufferers.

Dr. Brunner, United States Sanitary Inspector at Havana, in his last report to the Surgeon-General of the Marine Hospital Service, dwells upon the danger of yellow-fever infection being carried by cattle steamers plying between Cuba and the United States.

CORRESPONDENCE.

OXYTUBERCULIN AND PULMONARY TUBERCULOSIS.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: I wish to communicate the result of the employment of oxytuberculin (Hirshfelder) in the treatment of a patient with pulmonary tuberculosis: Mrs. S., aged 33 years, had been ill with phthisis for two years. Paroxysms of nocturnal asthma were a frequent and troublesome complication. One sister died of pulmonary tuberculosis and another sister has the disease. The patient rapidly lost weight as follows: February, 1896, weight, 109 pounds; August, 6th, 103 pounds; November 10th, 100 pounds; November 20th, 90 pounds. Physical examination revealed the presence of consolidation of both apices down to the fourth ribs; there were abundant râles, and numerous bacilli were found in the sputum. During November a severe attack of tuberculous pleurisy occurred, and the physical signs indicated disseminated tuberculous foci throughout the lungs. During the previous four months the temperature ranged from 99.5° F. in the morning to 102.5° F. in the evening; pulse from 90 to 110. The administration of oxytuberculin was commenced on November 25th: December 10th, fever absent; cough diminished; expectoration lessened and the general condition improved.

On January 10, 1897, the condition was as follows: fever absent; cough still less; expectoration greatly diminished; appetite good. On February 10th, the patient was so much improved that she resumed house-work. In the meantime the weight had increased to 110 pounds and the asthma had entirely disappeared. By May 10th, the weight had increased to 122 pounds; cough and expectoration had ceased. Physical examination showed that consolidation had disappeared; bronchial breathing over a small portion of one lung. Microscopic examination revealed one or two bacilli to the cover-glass. The improvement continued until at the present time the patient appears to be perfectly well. No examination of the sputum has been made for some months.

The treatment previous to the employment of oxytuberculin had consisted in the administration of the carbonate of creosote, protonuclein, cod-liver oil, and various other remedies, all of which proved of no avail. At the beginning of the treatment the patient was not expected to live a week. One point worth notice is the effect of the remedy in promptly relieving the attacks of asthma, which practically disappeared after one or two doses of oxytuberculin. In conclusion, I wish to add that the progress and termination of the illness has been carefully observed by four physicians.

D. A. BEATTIE, M.D.

SANTA CLARA, CAL., October 2, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

BACTERIOLOGIC EXAMINATION OF THE MILK-SUPPLY BY THE CITY LABORATORY—EXTENSIVE IMPROVEMENTS AT THE JEFFERSON MEDICAL COLLEGE—MEDICO-CHIRURGICAL COLLEGE'S OPENING—CHANGES AT THE UNIVERSITY MEDICAL SCHOOL—THE PUBLIC CLINICS AT THE TEACHING HOSPITALS—YELLOW FEVER ABOARD A VESSEL AT THIS PORT—ENLARGEMENT OF THE BLOCKLEY INSANE DEPARTMENT—PERSONAL—MEDICAL SOCIETY MEETINGS OF THE WEEK—VITAL STATISTICS FOR THE WEEK ENDING OCTOBER 9TH.

PHILADELPHIA, October 9, 1897.

MANY and urgent demands have been made from time to time by the physicians of this city for more careful attention on the part of the health authorities to the question of milk adulteration and contamination. In compliance with these petitions the Board of Health is about to adopt a new regulation which provides for the systematic bacteriologic examination of the milk-supply at the city's bacteriologic laboratory. Inasmuch as the real danger to the community lies not so much in the adulteration of the milk-supply as in its contamination by being sold in unsanitary and filthy shops, the proposed innovation should prove a distinct advance in the municipal control of this very important article of food. Guided largely by the result of bacteriologic findings, it will be a comparatively easy matter to treat the question of milk contamination efficaciously, and to proceed against unsanitary dairies and milk-shops in a manner which will give the best results.

The seventy-third annual term of the Jefferson Medical College was inaugurated on October 4th by the delivery of the opening address by Dr. G. E. De Schweinitz, Professor of Ophthalmology to this institution. Introductory remarks were also made by the President of the Board of Trustees, the Hon. William Potter, and an official announcement of much importance concerning the future of Jefferson was made by Dr. J. W. Holland, the Dean of the Faculty. It related to the immediate steps which are to be taken in the reconstruction of the college and hospital buildings, and contained the information that, as the leases of the adjoining properties purchased by the trustees of the college as sites for a new hospital and a new college will expire in March, 1898, work will be begun at once on the erection of a handsome and altogether modern hospital building. When this structure is completed, a college, to conform architecturally with the new hospital, will replace the present building. This extensive improvement, which has been planned for a number of years, will entirely reconstruct the institution, and is an advance viewed with liveliest satisfaction by the alumni and friends of the college. Speaking of "Jefferson," it is worthy of note that, since the inauguration of the four-years' course and additional requirements for admission, the character of the student body has materially improved, and, further, that, contrary to general expectations, the number of matriculants has, instead of decreasing, markedly increased, for the registration up to the present time is over fifty more than last year.

Health and Late Hours.—A German doctor, who has been collecting information about the habits of long-lived persons, says that the majority of those who have attained old age indulged in late hours. That is they retired after midnight and remained in bed late in the morning.

The opening lecture in the winter session of the Medico-Chirurgical College was delivered on October 4th by Dr. William L. Rodman, the newly elected professor of surgery. In company with the other medical schools of Philadelphia, the class at this college is a large one—in fact, the largest in its history, and having all the characteristics of a body of men from which is exacted for matriculation a high standard of qualification in the English branches.

A recent change in the teaching staff of the Medical School of the University of Pennsylvania is the appointment of Dr. J. P. Arnold as demonstrator of physiology, to succeed Dr. W. S. Carter, who recently resigned to accept a professorship in this branch in the University of Texas. Drs. A. Ferree Witmer and E. R. Shreiner were appointed assistant demonstrators of physiology and Dr. L. A. Ryan assistant demonstrator of chemistry. Owing to the ill-health of Professor Penrose, which enforces his absence from the city for the present, the didactic lectures on gynecology will be delivered by his assistant, Dr. H. D. Beyea, while Professor Hirst will conduct the gynecologic clinics during Professor Penrose's absence.

With the openings of the various medical schools, the public clinics at the several teaching hospitals have been resumed for the winter. There have been clinics at the Philadelphia Hospital for the last two weeks; those at the Pennsylvania and German Hospital began a week ago, while the clinics at the Children's Hospital are about to resume in a few days.

The arrival in the Delaware River a few days ago of a vessel with yellow fever aboard from an infected port in South America, has caused the sanitary officials of this city no apprehension, thanks to the efficient quarantine regulations by which Philadelphia is protected. The extent of these precautionary measures for the health of the community is not generally known. Before a vessel may enter this port she must pass the scrutiny of three distinct quarantine stations, the first two being Government quarantines, one situated one hundred miles down the Delaware, the second fifty miles further up, and the third the State quarantine station, thirty miles below the city. It is thus apparent that, with these inspections to pass, it is practically impossible for an infected ship to reach the city wharves.

A sum of \$60,000 is to be spent in additions and improvements to the Insane Department of the Philadelphia Hospital (Blockley), and this much-needed work is to be immediately begun, in view of the overcrowded condition of the insane wards of the hospital. There are 1300 patients in the insane department, notwithstanding the fact that the present accommodations are intended for but 1000 persons.

Among the recent arrivals from Europe of Philadelphia medical men may be mentioned Drs. G. E. de Schweinitz, Judson Deland, J. William White, Alfred Stengel, Horatio C. Wood, Joseph P. Tunis, P. S. Donnellan, D. D. Stewart, W. Eastery Ashton, Charles B. Noble, John B. Deaver, and John H. Packard.

Among the distinguished visitors to Philadelphia during

the past week have been Mr. Christopher Heath and Mr. Watson Cheyne, the British surgeons, who were entertained by Dr. W. W. Keen during their stay, and Lord Kelvin, the famous English scientist, who is at present a guest in the city.

A stated meeting of the College of Physicians of Philadelphia was held on October 6th, at which an interesting paper was read by Dr. A. A. Eshner, entitled "A Case of Obscure Diagnosis Exhibiting Hysterical Symptoms." At the election for Fellowship held after the close of the scientific business of the evening, the following were elected members of the College: Drs. William G. Spiller, John H. Girvin, W. A. N. Dorland, and Alfred Hand, Jr.

At a stated meeting of the Section on General Surgery of the College of Physicians, held on October 8th, Dr. John B. Roberts exhibited a patient upon whom he had performed a successful excision of the subclavian vein for a secondary malignant growth. The tumor was a scirrhous carcinoma of the mammary gland, with secondary nodules about the subclavian vein. These were excised without, it is interesting to note, any edema of the hand of the affected side as a sequence of the operation, and with recovery of the patient. Dr. Roberts also presented a note on a novel method of hastening consolidation in delayed union of fractures, which consisted in applying to the injured member a tight bandage, with the hope that the resulting increased local congestion of the part would hasten and augment the formation of callous. The treatment mentioned has given favorable results.

Dr. J. Chalmers Da Costa showed a case of gunshot wound of the lung. Eleven days after the injury there was a secondary intrapleural hemorrhage which almost proved fatal. Rib resection was performed, and $4\frac{1}{4}$ quarts of blood was evacuated. The lower lobe of the lung was badly lacerated and sloughing, and neither ligatures nor forceps would hold; so that the entire pleural cavity had to be filled with gauze about the lung in order to give a base of support before packing could be applied to the bleeding surface by which the hemorrhage was finally controlled. The patient recovered, and was exhibited at the College, along with a skiagraph which clearly showed the bullet lodged in the anterior mediastinum.

Dr. W. W. Keen described the sterilization of catgut by the Jefferson method, which consists of the use of ether, alcohol, mercuric chlorid, and palladic chlorid. Gut prepared by this method was found to retain its toughness for an indefinite period.

At a stated meeting of the Philadelphia Obstetrical Society, held on October 7th, Dr. Anna M. Fullerton read an interesting paper dealing with two unique cases of abdominal section. The first case was one of double ureter of the right side, which extended from the kidney to the bladder, and which was accidentally injured during a celiotomy. Implantation of the ureter into the bladder was effected, with recovery of the patient. The second case was one of wandering spleen simulating ectopic gestation. The organ was removed without bad effect upon the patient.

The deaths occurring in this city during the week end-

ing October 9th numbered 345, of which 99 were in children under five years of age. The total number showed an increase of 3 from the preceding week, and a decrease of 12 from the corresponding week of last year. Contagious diseases were responsible for 31 deaths—2 less than last week. Diphtheria cases numbered 116, with 26 deaths; scarlet fever 46, with 1 death, and enteric fever 44, with 4 deaths.

OUR BERLIN LETTER.

[From our Special Correspondent.]

THE INCREASE OF RED BLOOD-CELLS AT HIGH ALTITUDES QUESTIONED—THE BERLIN POLICE AND CERTAIN FORMS OF QUACKERY—FOOT AND MOUTH DISEASE AND THE GOVERNMENT COMMISSION'S REPORT AS TO VACCINATION FOR IT—A DISCUSSION AS TO THE MERITS OF CATHETERIZATION OF THE URETERS—DANGERS OF URETHRAL INJECTIONS.

DURING recent years much theory has been evolved in an effort to explain the physiologic causes of the increase in the number of red blood-cells in high altitudes. The whole subject of the *rationale* of mountain climates in the treatment of tuberculosis has been revolutionized by the series of observations on this subject begun about 1890. It has come to be generally accepted that the call on the organism for more oxygen carriers in the rarefied atmosphere of high altitudes leads to a reflex excitation of the blood-making organs, and to a consequent increase in the number of red cells. Nothing was more striking in the debate on the therapeutics of tuberculosis at the International Congress at Moscow than the perfect complacency with which this theory was referred to as though it were beyond doubt or cavil. Now comes a daring skeptic with the suggestion that the phenomena observed are the result of physical conditions acting upon the instruments employed in making the determination of the number of red cells—that the increase is only apparent and does not occur in the circulation, but is due to faulty, though supposedly exact, apparatus. Dr. Gottstein (*Allgemeine Med. Cent. Zeit.*, No. 64) reports a series of observations made with the Thoma-Zeiss blood-counting apparatus and artificial serums prepared to imitate blood. With these he claims to have found under varying atmospheric pressure variations in the number of objects, about the size of blood-corpuscles in the solutions usually employed, such as are commonly described as occurring in the circulation at high altitudes. His claim is that the varying pressure of the air on the cover-glass is enough to cause sufficient difference in the volume of the space beneath it to account for the variations in the number of red blood-corpuscles. The large factors employed in obtaining the number of cells in a cubic millimeter multiply the slightest inaccuracy, and thus explain the errors in question.

The fact that the increase in the number of red blood-cells immediately follows the ascent of the mountains and does not persist after the descent, and also that it is strictly proportionate to the altitude at which the observa-

tion is made, are circumstances that would seem to substantiate Dr. Gottstein's theory.

In this city there has recently been a good deal of advertising of another electric current-developer. Like the electric rings, the electric belts, and dry batteries of all varieties, which develop electric currents with untold healing powers when worn in contact with the skin, the new electrical remedy, the *voltakrenz*, is warranted to cure all the ills to which flesh is heir. The apothecaries took it up very generally, for the public was beginning to inquire for it, and the inducements offered by the manufacturers to retailers were even more generous than usual. There is some limit, however, to the extent to which Quackery is permitted to go in Berlin, and this latest addition overstepped the limit. There are regulations to prevent "*Curfuscheri*," which is the expressive word they have here for Quackery, and so the Commissioners of Police took a hand. A notice to the effect that the *voltakrenz* is an evident humbug, meant only to deceive the public, and that its sale, or the keeping of it for sale, is unworthy of the public service due from an apothecary and contrary to the legal regulations relating to their business was served on the apothecaries. As the notice closed with the very practical words, that the sale of the article in question would be punished by a fine of three hundred marks, it is probable that the last has been heard of the *voltakrenz*.

There remains, of course, any amount of Quackery in Berlin which cannot be reached so effectively by public regulation, but it is encouraging to find that even this much may be accomplished by means so simple. Surely some of our American cities could well imitate Berlin in this matter, as in many others, and do something to stop the palpable medical swindles which are every day displaying more effrontery and shamelessness.

The commission appointed by the German Government sometime ago for the investigation of foot and mouth disease has just made a preliminary report. The results of its observations at the Institute for Infectious Diseases in Berlin is that so far no microbe can be demonstrated to be the cause of the disease. Lymph from affected animals which seems to be sterile as regards bacteria conveys the disease when intravenously injected into susceptible animals.

As various tissue particles and other organic matter is present in the lymph, it is suspected that the cause of the disease is a protozoon, but this is merely a suspicion. Lymph from the vesicles of the disease, intravenously injected, produced the disease in from one to three days, the first symptoms occurring in the mouth, followed after a day or two in cattle by vesicles on the udders and feet. After the appearance of the local manifestations the virus no longer exists in the blood, so that the vesicles are really Nature's method of eliminating the poison. Cattle and swine may be artificially immunized. If virulent lymph be mixed with the blood of an animal that has had the disease it may be injected into susceptible animals without producing the affection, but with the production of immunity. Lymph which has been heated to a certain degree produces the same effect and without noticeably affecting the

health of the animals into which it is injected. The members of the commission consider that the progress of the disease may be hastened to a cure by the use of the serum of immunized animals—that epidemics of the affection may be prevented by protective inoculations with a modified lymph. As to the methods of protective and therapeutic inoculations their observations have not as yet been sufficiently extended to enable them to state definitely the conditions of preparation, and the *mode* of employment best calculated to secure certain results. The whole subject is of more interest in Berlin than almost anywhere else, as it is from this city and its immediate environs that most of the epidemics among human beings have occurred.

As it is in Berlin that the methods and instruments for the catheterization of the male ureter have been brought to such a state of perfection as to make the procedure practical, one is a little surprised to find a discussion as to the diagnostic and therapeutic value of ureteral catheterization occupying a good deal of attention. Sometime ago Dr. Holländer, in an article in the *Berliner klinische Wochenschrift*, called the utility of the procedure into question, and pointed out that the admitted dangers are too great to justify its employment in view of the very problematic results. In fifty per cent. of the cases it causes some hemorrhage from the mucous membrane either of the ureters or of the ureteral papillæ. In about one-half of these cases, it is true, this is supposed to be not more than a diapedesis of red corpuscles owing to irritation of the mucous membrane. This furnishes, however, in either case an extremely favorable lodging-place for pathogenic bacilli. The most careful antiseptic douching of the bladder is recommended before catheterization of the ureters is attempted, but it is needless to say that antiseptics strong enough to give the remotest prospect of making the interior of the bladder sterile are utterly out of the question. When an ascending pyelitis does not exist, a very favorable opportunity for its inception is furnished by the procedure even in the most skilful hands. That this danger is not imaginary the observation after catheterization of some cases of infectious lesions, notably tuberculosis of the ureteral papillæ, serves to show. As to the advantage usually claimed for it—that it enables the surgeon to judge of the possibility of the other kidney being healthy enough to carry on the eliminative functions after nephrectomy of a diseased organ, it is not always so unquestionable. In any case where there is a purulent or other infectious disease of one kidney there will be found, owing to the elimination of toxins going on in the other, more or less albumin and casts in the urine derived from it, which will cause the surgeon to hesitate in giving an opinion as to the advisability of doing a nephrectomy. That catheterization of the ureter cannot always be depended upon even where the other kidney is extensively diseased, a case reported at the Moscow Congress very strikingly shows. Almost normal urine was obtained from the ureter of a supposedly healthy kidney. Nephrectomy of the other kidney was followed by complete anuria, and the autopsy showed a pyelonephritis of the remaining organ, but with one unaffected pyramid from which the normal urine had been excreted.

Dr. Casper in reply to Dr. Holländer in the last number of the *Wochenschrift* points out how much has been done for the diagnosis of kidney conditions by catheterization of the ureters, and how much light it has thrown on one of the darkest pages of surgery—the diagnosis of nephritic conditions. As to tuberculosis it gives undoubted proof of the one-sidedness of the affection, and so makes surgical interference possible in an otherwise fatal disease. As to the presence of calculi in the lower part of the ureter, soundings form an excellent guide as to their position. In regard to the dangers, he does not seek to minimize them, but states that experience and the minutest antiseptic precautions are required; further, that the procedure should only be employed in cases where the seriousness of the affection is such as to justify the risk involved. He concludes by pointing out that in certain cases of pyelonephritis, in his own and other's hands, cure has followed the frequent flushing of the renal pelvis through the ureteral catheter.

A curious comment on this last statement is furnished by a report from Professors Goldscheider and Lewis in the last number of the *Deutsche Med. Wochenschrift*. They found in dogs that but very little pressure of liquid in the ureter and renal pelvis is sufficient to force the renal filter and lead to the entrance into the circulation of liquids or gases. They saw animals die very rapidly as a consequence of the entrance of air into the renal veins and the vena cava, whence it was carried to the heart. They observed the air-bubbles in the veins during life and found them, *post-mortem*, in the cardiac ventricles. They quote Poirier, the French anatomist, who reported some time ago that he had seen solutions, injected under very slight pressure into the ureter, appear in the renal veins. Evidently the subject of ureteral catheterization is in an experimental stage, but it is to be hoped that the enthusiasm of the young votaries who have taken it up because it requires knack and practice will not be carried on into fatal experiments upon human beings. It is just such fads which are the righteous occasion of the most serious condemnation of the profession. Such is, as it were, the index of an overzealous longing for personal distinction in a new field which completely oversteps the bounds of well-ordered conservatism.

SOCIETY PROCEEDINGS.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held Monday, September 27, 1897.

The President, LANDON CARTER GRAY, M.D., in the Chair.

CERTAIN SOURCES OF NEUROSES IN WOMEN

was the title of a paper read by DR. EGBERT H. GRANDIN. (See page 494.)

DISCUSSION.

DR. ROBERT A. MURRAY agreed with the author that in most instances the trouble is not a neurosis, but a bad diagnosis. The cause of pain and objective symptoms

must be sought for, the whole body being examined if necessary and the attention not confined to any one set of organs. He also urged that more care be taken in obtaining the history. He then cited the case of an unmarried woman, forty-four years of age, who at intervals had been flooding for years. Her physician attributed this to "the change of life," and did not make a vaginal examination because she was a single woman. When seen by the speaker it was found that the cervix was almost entirely destroyed by malignant disease, and the case was, of course, hopeless.

DR. H. N. VINEBERG asked the author how he had been led to examine the neck of the bladder in the first case mentioned. When no bladder symptoms are present he hardly considered such an examination justifiable. In regard to adhesions of the clitoris being the cause of reflex symptoms, he had never seen such a case, possibly because he had not much faith in the theory and had not looked for the condition. He was of the opinion that altogether too much importance is placed upon insignificant adhesions of the clitoris. He had seen cases in which reflex symptoms were due to injury of the coccyx, but in such cases his attention had been directed to the part by pain in its neighborhood, and the diagnosis was easily made. He was glad to hear the author sound a note of caution against removal of the tubes and ovaries in the hope of relieving nervous symptoms. In the majority of cases in which this is done the patient is made worse by the operation, and it is generally accepted that it is not justifiable to remove the appendages unless there is actual disease present, no matter what the nervous symptoms may be. The speaker then said that, in his opinion, incomplete sexual congress is a frequent cause of neuroses in women, and very often overlooked. Dr. Bangs of this city has pointed out the injurious effect which this has upon men, and it should not be forgotten that the effect upon women is just as serious.

DR. C. A. VON RAHMDOHR called attention to one cause of general neuroses and hystero-epilepsy in women which the author had not mentioned, *viz.*, laceration of the cervix. He said he had seen a case in which simple closure of an everted cervical laceration resulted in curing a condition which had been diagnosed as hystero-epilepsy. He also referred to neuroses occurring during labor and caused by fissure of the anus or of the neck of the bladder.

DR. L. F. BISHOP said that as epilepsy is a disease of the cells of the brain, it cannot be cured by attacking other organs of the body or by any operation. Therefore, it is a mistake to remove the tubes and ovaries in the hope of relieving epilepsy. He mentioned "post-operative neurasthenia" as another neurosis which frequently develops in women after surgical operations.

DR. CARTER believed with the author that fissure of the neck of the bladder is a frequent cause of reflex symptoms in women. He mentioned three cases in which neuroses were due to this condition, although no bladder symptoms were present. In speaking of the relation of the clitoris to neuroses, he remarked that the Chicago practitioner who wrote about "clitoroid women" and Baker Brown, who believed that every woman should be

deprived of her clitoris, undoubtedly are extremists, but, nevertheless, ninety-nine women out of a hundred have adhesions of the clitoris, and that not one of the ninety-nine is free from neurotic symptoms.

DR. O'BRIEN spoke of a case in which neurotic symptoms were due to middle-ear disease, and to another in which asthma was relieved by removal of the middle turbinate.

DR. W. M. LESZYNSKY said he wished to enter his protest against the removal of healthy ovaries for the relief of epilepsy or insanity. Such operations he considers not only unjustifiable, but criminal.

THE PRESIDENT agreed with the author in believing that a neurosis is a very indefinite condition. Epilepsy has a certain group of symptoms which mark it as something apart, although but little is known of so-called "idiopathic" epilepsy. He does not think that all the nervous symptoms which occur in women as a result of visceral disease can be called "neuroses" in the true meaning of the word. True epilepsy, with absolute loss of consciousness and with tonic or clonic convulsions can never be caused by disease of the pelvic viscera. There are, however, many forms of neurotic phenomena, as neurasthenia; neuralgia, and those symptoms which cannot be grouped unless they are called "hysteria," which are due to some disturbance of the pelvic viscera. In such cases it is well to examine the whole economy, and if any pelvic trouble exists this should be remedied. He has, however, never observed anything but temporary benefit follow the removal of healthy tubes and ovaries in a hysterical case.

DR. GRANDIN, in closing, said, in reply to Dr. Vineberg's question, that there were probably some bladder symptoms present in his first case, but that such were masked by more prominent symptoms. However, as nothing was done to cure the woman except to dilate the vesical sphincter and apply phenic acid to the fissure, he did not think there could be any doubt in regard to the cause of her symptoms. He disagreed with those who said that too much attention is being directed to the clitoris, for he is thoroughly convinced that adhesions of this organ to its prepuce are responsible for many nervous manifestations in women, and may even simulate pelvic disease. He, furthermore, expressed the opinion that the clitoris should be carefully examined at birth, and if adhesions exist they should be severed.

NEW YORK ACADEMY OF MEDICINE.—SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held October 7, 1897.

DR. E. G. JANEWAY, President, in the Chair.

DR. C. J. JEWETT of Brooklyn read the first paper of the evening, entitled

MEDICAL TREATMENT OF PUERPERAL SEPTIC DISEASES.

He gave a brief outline of the general plan of treatment, beginning with the statement that if sepsis develops in a puerperal woman the physician is to blame. Sepsis is a preventable disease, and what is wanted is prophylaxis.

It is not only necessary to be aseptic at the time of labor, but the asepsis should begin weeks before. Conditions such as anemia, albuminuria, syphilis, etc., should be treated, and the state of the digestive tract and alimentary canal looked after to guard against auto- and fecal intoxication. Sepsis does not occur in people whose kidneys are in good working order. Attention must be given to the birth canal, in which microbes may be present, and pre-existing disorders of the bladder should be investigated. Gonorrhea is a frequent cause of puerperal sepsis. If present the vagina should be douched twice daily with a solution of bichlorid of mercury for two or three weeks previous to labor, or the vaginal canal may be dusted with subnitrate of bismuth. The importance of asepsis culminates in the labor. Obstetricians of special training have practically no death-rate in their practice, and there should be none. Douching during labor is not only useless but positively harmful, for it washes away and interrupts for hours the flow of the natural acid secretion of the vagina which is its own protective agent against disease-producing germs.

Infection is most liable to occur during the first few hours after the birth of the child. The resistance of the tissues, especially those of the vagina, is at a minimum and for this reason manipulation of the lower passages is dangerous. Introduction of the hand is dangerous. Retained remnants of the placenta or of the secundines had best be left to be cast off spontaneously. The advantages of immediate suture of lacerations of the cervix are doubtful, unless they cause hemorrhage.

As soon as infection is suspected, an examination should be made. Septic vaginal wounds should be cleansed twice daily, touched with iodine or chlorid of zinc, and a strip of gauze inserted in the vagina. If douches are required, peroxid of hydrogen or Labarague's solution may be employed. The treatment of the uterine cavity requires much tact and judgment. The risk of carrying infectious material with the hand from the vagina to the uterus must be borne in mind, and for this reason the dull curette is best employed to ascertain if there is necrotic material in the uterus, should this be suspected; but the curette should not be used as a routine measure. The presence of sepsis in the uterine cavity can be determined by the odor of the material which clings to the curette, and which should be subjected to a bacteriologic examination. Decomposed blood-clots and all other *débris* should be removed with the curette which is cleaner than the finger. Intra-uterine irrigation with a non-toxic disinfecting fluid should then be practised to wash away all putrescent matter. The entire cavity of the uterus may then be painted with iodine, a solution of carbolic acid (1-40), or with phenique. A loose packing of gauze should then be introduced and allowed to remain for twenty-four hours; or pencils of iodoform may be inserted. It is well to irrigate first with salt solution or a mild antiseptic. In the absence of *débris* in the uterus, the curette is contraindicated.

In violent forms of infection local measures will do no good. Intra-uterine irrigation is of but little use except to wash away *débris*. Some advocate the introduction of

a soft drainage-tube, and the washing out of the uterus with absolute alcohol. Iodine water has also been recommended for this purpose, and in Germany intra-uterine injections of steam have been practised. The uterus is first curetted and the steam at a temperature of 100° C. (212° F.) is injected through a perforated metal tube for two minutes; the temperature of the steam is then raised to 112° C. (233.6° F.) and the injection continued for fifteen seconds. It is said that no pain or discomfort follows this treatment, the metal tube being so encased that it does not burn the parts with which it comes in contact.

The systemic treatment should be such as will control the local septic process as well as keep up the patient's strength. Alimentation and elimination are important. Alcohol should be administered to the point of intoxication, but this unfortunately is not well born by the stomach. Strychnia and quinin should be given, especially the former. The latter is of value in small doses; in large doses it does harm by hindering oxygenation. Spartein and other cardiac stimulants are of value in heart depression. Feeding should be limited to liquid foods, predigested if necessary. An abundance of fresh air is imperative. All measures tending to elimination should be employed, and plenty of water administered. Experiments show that three times as much poison is required to affect animals which drink water as is needed to affect those who do not. The administration of saline purgatives is also important, and ergot is recommended to limit diffusion of the septic poison. Intravenous injection of mercuric chlorid has also been practised, but this is hardly to be recommended in general practice. The subcutaneous injection of turpentine has also been suggested. The coal-tar antipyretics are not only heart-depressors, but they hinder oxygenation. Cold bathing on the other hand, has the effect of a nerve tonic, and also favors elimination. Cold sponging is indicated when the temperature is above 100° F. The treatment of puerperal sepsis by antistreptococcic serum is still under trial, and as yet no definite standard of strength has been decided upon. The author's experience is limited to six cases, and in only one was any improvement noticed. Care should be taken to procure a reliable preparation, and it should be fresh. Nuclein, which acts upon the leucocytes, has recently been recommended. It is to be regretted that, while much has been suggested, little has proved of value in the treatment of local septic disease.

DR. E. H. GRANDIN then read a paper on the

SURGICAL TREATMENT OF PUERPERAL SEPTIC DISEASES.

The author said that inasmuch as puerperal infection is simply wound-infection, surgical principles such as are applied to sepsis in other parts of the body, should be employed in its treatment. He treated the subject under two headings, *viz.*, putrid infection, so-called sapremia caused by toxins, and septicemia due to pathogenic germs. Sapremia, treated early and properly, may be ordinarily controlled, because the elements of putrefaction tend to remain localized at the site of their origin. In septicemia, on the other hand, we have to deal with a condition de-

pendent upon the growth of pathogenic microbes, the streptococcus, and the staphylococcus, which through rapid multiplication and dissemination through the venous and lymphatic channels, make the infection systemic as well as local. A neglected sapremia may become a septicemia.

Before deciding upon the treatment, it is essential to determine whether the condition is one of sapremia or of septicemia. The most frequent form of puerperal infection is sapremia, and the uterus is generally its location. The present method of treatment is curettage, which, however, is often resorted to unnecessarily, to the detriment of the patient. At the present time the impulse is to curette in every case, just as formerly it was the habit to employ the intra-uterine douche. The curette is indicated in sapremic infection; but in endometritis curetting will cause dissemination of the pathogenic microbes throughout the body. Research has shown that in putrid endometritis Nature throws out a barrier of leucocytes under the putrescent mass in the uterine cavity, to prevent the passage of microbes into the lymphatics and veins. Local infection will become general infection if this barrier is broken down by curetting. The chances of recovery are good in proportion as the infection remains localized. Therefore, our treatment of puerperal sepsis should favor localization, and if surgical measures are employed they should be undertaken before systemic infection is marked. As a rule, putrid endometritis becomes septic endometritis only when there has been infection from without at the time of delivery or during the puerperium, although it is possible for the two to co-exist. The differentiation should be made under perfect asepsis by exploring the cavity of the uterus with the fingers, the patient being anesthetized. This should be done before the curette is used. The curette is contra-indicated unless the examination shows putrid retained *débris*. If such be the case, the putrid masses and softened necrotic tissue down to the granulation layer only should be removed. The uterine cavity should then be irrigated and packed with sterile gauze. If no improvement takes place within thirty hours, the case is probably one of septic endometritis, and the less active the treatment the better. Such local measures as will kill the germs at work on the surface of the uterus should be undertaken in the hope of preventing further dissemination. Iodoform gauze should not be used, because the symptoms of iodoform toxemia, which may set in, resemble those of septicemia.

In septic endometritis, no putrid remnants will be found in the uterine cavity unless there is a combination of both varieties. This form of endometritis leads to septic metritis, salpingitis, and peritonitis. Frequent irrigation with bichlorid may be effective.

When infection has ceased to be local and involves uterus, tubes, ovaries, and peritoneum, the main point is not *how* to operate, but *when*. The indications and technic are the same as in similar conditions in the non-puerperal state. The only difference lies in the prognosis. The point is to act before systemic infection is complete. Operation avails but little when veins are clogged with septic thrombi, and liver, spleen, kidneys, heart and brain have been invaded by septic germs.

Local peritonitis and so-called cellulitis are, as a rule, benign as regards life if they remain localized, and these exudates often disappear without surgical treatment. They may, however, become purulent, and general systemic infection result. When the symptoms remain acute for days, an examination under narcosis should be made to locate the purulent foci which should at once be incised and drained at the most accessible point. Local peritonitis, however, is in reality extra-peritoneal and does not require surgical treatment unless the general peritoneal cavity has become affected secondarily.

If local peritonitis is associated with metritis and salpingo-öophoritis, early diagnosis and prompt, radical surgery is necessary to save life. It may become a question of vaginal hysterectomy in order to afford thorough drainage of the pelvis. In such cases, however, systemic infection is so intense that death generally results in spite of operation. The all-important problem of the hour is how to determine at an early stage whether surgery will be efficient. A high grade of metritis calls for hysterectomy, and in cases of septic endometritis the doctrine is now that the uterus should be removed if the infection is localized in the endometrium—something which no man can determine. Our policy, therefore, must be to treat surgically each complicating factor as it arises, and hope for the best.

In regard to the use of the antistreptococcic serum, cases of general septic peritonitis uncomplicated by the puerperal state have been reported in which cure has followed the antitoxic serum treatment associated with prompt and radical surgery, but no well authenticated case has been reported where this result was obtained in the puerperal state.

Other varieties of peritonitis, in which the prognosis is more favorable may complicate the puerperium. The peritoneal cavity may become infected by the rupture of an abscess of the vermiform appendix or of a pre-existing ovarian abscess or pyosalpinx. In either event the case should be treated as usual in that condition.

DISCUSSION.

DR. CHARLES P. NOBLE of Philadelphia said the results of the serum treatment of these cases had not been satisfactory in Philadelphia. Twelve cases with six deaths and six recoveries have been reported there by various men, and the general opinion is that the serum is harmful. It is but fair to admit that the cases in which it was employed were of more than average severity. Personally, he did not feel inclined to use the serum treatment unless bacteriologic examination showed the presence of streptococci in the system at large. He emphasized the importance of making a careful diagnosis and agreed with Dr. Grandin that an examination of the uterine cavity should be made under anesthesia. He would also investigate the condition of the vagina, as infection from lesions of that canal and perineal lacerations are common. If these be discovered early, the septic process can be cut short by touching them with carbolic acid or nitrate of silver. In cases seen late, a thorough examination is of value in showing the source of infection

and in determining whether or not pelvic exudate is present. In regard to the employment of radical surgical measures in cases of puerperal infection, he referred to the frequency with which these patients recover with intact organs and advised against extirpatory operations. He cited a case in which he had attempted to do an abdominal section, but was forced to desist because the patient could not be anesthetized, and he was finally obliged to drain *per vaginam* without narcosis. The woman made a good recovery, and much to his surprise has since had another baby. When employed early, surgical drainage results in recovery in many cases, and, therefore, great conservatism should be practised. When suppuration has not occurred, medical treatment will result in cure. In the matter of intra-uterine injections, he is of the opinion that the length of time during which they are employed should be limited, as he sees no advantage to be obtained from prolonged irrigation—if used longer than one or two days, it is more apt to do harm than good. His experience with the intravenous use of salt solution leads him to believe that it is an agent of great service in drawing off ptomains and in keeping up the strength of the heart.

DR. PAUL F. MUNDE expressed himself as being gratified by the conservative stand taken by the authors in regard to surgical interference. Some years ago he saw in consultation many cases of puerperal septicemia, and he had always felt that there was nothing to do but to keep the patient alive while the disease ran its course. If this were possible, she recovered; if not, then she died. He believes that much is to be expected of the new antitoxin treatment, which he has used in two cases with the most satisfactory results. The speaker was glad to hear the use of the curette advocated only in cases where placental tissue and *débris* are retained in the uterine cavity. Removal of the uterus in puerperal infection is not, as a rule, a good operation and generally results fatally. Cases of septic purulent peritonitis, whether puerperal or not, should be opened and drained.

DR. HENRY C. COE remarked that the treatment of puerperal endometritis, at first very conservative, then very heroic, and again very conservative, never seems to reach a middle ground. In looking back to the time when it was the custom to wash out the uterus every two or three hours day and night, he is impressed with the remarkable power of resistance which the patients must have had to be able to stand the nervous shock and physical fatigue of the often repeated intra-uterine irrigation. After that, when the curette came in vogue, all cases were curetted and much harm resulted. He agreed with Dr. Grandin that the differential diagnosis in puerperal fever could only be made by exploring the uterus with the fingers under narcosis, but added that this is not always possible in cases where the uterus is so large that it reaches the umbilicus. The author did not mention one important point, *i.e.*, that immediately after delivery the uterus is in a state of antelexion which prevents drainage, and that this often causes septic infection. In some cases the only treatment necessary is the opening of the canal. In regard to the treatment applied to the uterine

cavity, he has seen good results follow the use of peroxid of hydrogen in a desperate case, but keeping the uterus packed with gauze saturated with alcohol is probably the best method now in use. He has never seen a case suitable for hysterectomy. The intravenous injection of salt solution has proved very useful in his hands, the patients showing improvement at once. He has also employed oxygen inhalation with so much benefit that it seems to have an almost specific effect.

DR. C. A. VON RAMDOHR called attention to the following points: The proper treatment of puerperal sepsis is prevention, and it is possible to prevent it. When infection takes place, the obstetrician is the infector. Auto-intoxication does not exist. The differential diagnosis between sapremia and septicemia must be made early. *Never* use bichlorid. It has been proved that when applied to the parturient canal, under certain conditions, it will give rise to acute nephritis. Whenever sapremia is present, as indicated by fever, leucorrhea, and the presence of retained *débris*, the latter should be removed by the curette and *one* intra-uterine douche given. Whenever there is a pus-collection in the pelvis, it should be treated like any other abscess. When such a collection exists and the uterus proves an obstacle to thorough drainage, the organ should be removed, for it will always be a nidus for future disease and never a useful organ. Give alcohol in large doses—one pint of brandy in twenty-four hours. Serum-therapy will be welcome if it can give us hope. The use of the coal-tar preparations is a step backward, for they weaken the muscle of the heart. Where systemic infection has taken place, local treatment is worse than useless.

DR. H. VINEBERG narrated the history of a case of puerperal endometritis in which the patient had done well for a week when she suddenly had a chill and a rise of temperature, the chill being repeated on the following day. Abdominal pain soon developed. Upon examination, the vagina and cervix appeared intact, and the only thing which attracted attention was the large size of the uterus. Investigation showed that a portion of the placenta was retained, and the patient recovered after curettage and irrigation.

DR. ROBERT A. MURRAY expressed the opinion that sepsis in many cases is due to neglect of the old rule to give ergot in the third stage of labor in order to secure firm contraction of the uterus. In a large hospital and out-door obstetric practice, he had followed this rule with the result that he seldom had a case of sepsis, and this in spite of the fact that many of the women were delivered amid the most unfavorable surroundings. A second dose of ergot was given if there was much bleeding. If the uterus is kept well contracted, blood-clots will not lodge there, decompose, and cause sepsis. If there was a slight rise of temperature, the finger was passed over the entire surface of the uterine cavity, and if any foul odor clung to the examining finger, the uterus was curetted, treated like an abscess cavity, and swabbed with alcohol, carbolic acid or tincture of iodine to prevent further absorption of septic germs. He was glad to hear Dr. Coe mention inhalation of oxygen, which the speaker knew to be very

beneficial. Alcohol should be given and also veratrum viride, which acts upon the heart when given in small doses. In general septic peritonitis he considered it useless to operate. When seen early, incision and drainage may be employed.

DR. J. RIDDLE GOFFE said that the treatment he employs in these cases is similar to that outlined by Dr. Grandin, differing only in that he always explores the cavity of the uterus with a curette rather than with the finger, not because he fears that infection may be carried by his own hand, but for the reason that he has seen so many cases in which sepsis has been conveyed in this way; that he has made it a rule to advocate the use of the curette for diagnostic purposes, because it can be made *absolutely* aseptic by boiling.

DR. SIMON MARX thought it would be difficult to follow Dr. Grandin's advice, to curette down to the granulation layer only, in cases of putrid endometritis. In regard to the antistreptococcic treatment not being successful in cases of puerperal sepsis, although of so much benefit in surgical cases, the speaker attributed this either to the fact that in the former the infection is often a mixed one, or to some influence which the puerperal state has in intensifying the poison. His experience with the serum has been most unsatisfactory and in some cases has seemed to hasten death, and he is of the opinion that the cases reported as cured by it in France and Germany were cases of sapremia and not of septicemia.

DR. J. M. MABBOTT called attention to the frequent occurrence of malarial fever during the puerperal state. Several such cases have been noted at the infant asylum, and in all the plasmodium malariae was found in the blood. The temperature fell after large doses of quinin. It was his opinion, therefore, that quinin should be given when a rise of temperature takes place in the puerperal woman, rather than resort should be made to the antitoxic treatment which, it is acknowledged, may be harmful.

DR. W. EVELYN PORTER expressed himself in favor of intra-uterine irrigation, but said that much discomfort and pain is caused by it and much damage done if it is not properly performed. These disadvantages will be obviated if a flexible rubber tube is inserted into the uterus well up to the fundus. Frequent irrigation is followed by good results. Where portions of the placenta and membranes are retained, they are more easily removed with forceps specially constructed for this purpose, than with the curette.

DR. A. MONAE LESSER also referred to the frequent occurrence of malarial fever in puerpera, and recommended the administration of large doses of quinin and a liquid diet.

DR. JEWETT referred to Dr. Grandin's division of septic infection and said he would make three, *viz.*, *sapremic*, *mildly septic*, and *highly septic*. He emphasized the fact that the curette is permissible only when there are blood-clots and shreds of membrane in the uterine cavity, and that it is contra-indicated in purely septic cases. He was glad to learn from Dr. Noble of the beneficial effect which follows the intravenous injection of salt solution.

DR. GRANDIN took exception to the statement that it

is safer to examine the uterine cavity with the curette than with the hand because the former is cleaner, and said that the man whose hands are not clean enough to examine the uterus, is out of place at the obstetric bedside.

REVIEWS.

A SYSTEM OF PRACTICAL MEDICINE. By American authors. Edited by ALFRED LEE LOOMIS, M.D., late Professor of Pathology and Practical Medicine in the New York University, and WILLIAM GILMAN THOMPSON, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University. Vol. II., Diseases of the Respiratory and Circulatory Systems, and of the Blood, Kidneys, and Genito-Urinary Organs. For sale by subscription. Philadelphia and New York: Lea Brothers & Co., Publishers, 1897.

IT was no idle assumption to infer, after a careful reading of the first volume of this system, that each succeeding volume would be up to the high standard set by its predecessor. That this is true of the present book, the merest casual perusal will prove. A conscientious inspection of the work, however, brings out so many points of notable interest and value that we predict that its contents will long remain, in many parts at least, classic in American medical literature.

Almost the last, if not the last, article which the senior editor of the work wrote prior to his death is the one on "Endocarditis" contained in this volume. Here one reads experience, observation, practice, symptoms, and pathology, penned by the hand of a master. The style is so flowing and clear, the text so free from verbiage and diffuseness, the logic so convincing, that it is safe to assert that the subject has never been treated in a more perfect manner. Dr. Loomis need not have conceived this monograph to have produced a lasting monument to himself among medical readers; but if all his other works were swept away, this complete treatise on valvular disease of the heart would remain as a perpetual reminder of his greatness.

What is true of Dr. Loomis' article may be said of the others. Here and there are to be noted omissions and slight inaccuracies, but they do not mar the excellence of the entire work. The diseases of the respiratory and circulatory systems and mediastinum appear in the form of monographs, and bear many evidences of close editorial supervision, with an unusual result of harmony in the various articles. The diseases of the blood are assigned two chapters, those of the kidney four. The volume is concluded by three chapters which are devoted to the diseases of the bladder and prostate gland.

It may be of interest to point out that no mention is made in the article on pulmonary embolism of the frequency of an embolus from the crural vein as the cause of sudden death in elderly people, a pathologic fact to which Kolisko of Vienna has called attention. In the discussion of new growths of the lung the microscopic examination of pleural exudates for typical cells is not spoken of. These trifling inaccuracies are mentioned not in the spirit of

criticism, but to show how practically perfect the work is, since only such omissions have crept into it.

There can be no doubt that the "American System of Practical Medicine" will rapidly take its place among the best works on internal medicine ever published in this country. It is so thorough, so complete, so well-conceived, and so well-written, it represents so perfectly American medical thought and teaching that it is bound to occupy for many years an exalted station. The volume is beautifully illustrated and handsomely printed.

EYE-STRAIN IN HEALTH AND DISEASE. By AMBROSE L. RANNEY, A.M., M.D. New York: The L. A. Davis Co., 1897.

THIS volume is very appropriately named, for in the space of 316 pages the author treats only of the effect of eye-strain upon health and in causing functional disease. A very advanced position is taken as to the importance of eye-strain in producing chorea, epilepsy, and insanity, as well as such comparatively slighter affections as headache, neuralgia, insomnia, and neurasthenia.

The importance of errors of refraction and of heterophoria in causing the graver of these diseases was ascribed a high place and bravely supported by the author as far back as 1888 in his work upon "Nervous Diseases." While American oculists in particular have recognized the necessity of the most thorough test and correction of these defects, and have ascribed and proved them to be the sole cause of many forms of headache, neuralgia, and various forms of morbid eye-conditions, as styes, conjunctivitis, ulcers, etc., but few of them have supported the author in the stand he takes in epilepsy, chorea, and insanity. The volume contains a large number of very full and complete histories of cases well verified by consulting physicians, tabulated and arranged in a most convincing manner.

However they may disagree with the author on certain points, a great benefit would accrue to oculists and neurologists, and thus to their patients, by a careful reading of his book. It would be rare, indeed, to find one of either specialty who would in this day deny to the eye its influence in causing reflexes, and who would not wish to eliminate that possibility as a cause, or, at least, as having an influence, in cases like the above.

In Chapter II. are given the methods of making all the modern tests of vision and ocular muscles. One of the best features of the book is that every test is fully, but briefly, described, and the difficulties to be encountered pointed out.

Dr. Ranney's work deserves careful reading, even if some of his conclusions cannot be accepted.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Twelfth session, Philadelphia, 1897.

THE high standard set by this Association has been carried out in its meeting of 1897. The address of President Da Costa, on "Tendencies in Medicine," is a thoughtful and scholarly paper. Among the more striking contributions may be mentioned "Cancer of the Stomach in Early Life, and the Value of Cells in Effusions in the Diagnosis of Cancer of the Serous Membranes," by Dr. George

Dock; "Hepatic Complications of Typhoid Fever," by Dr. William Osler, and the report of a case of "Jacksonian Epilepsy; Adenoma of the Liver; Acute Ascites with Tubercle Bacilli," by Dr. A. Jacobi. It is most unfair to discriminate, since all the papers are marked by original thought and original research. The volume, as usual, is beautifully printed.

DIGEST OF CRITICISMS ON THE UNITED STATES PHARMACOPŒIA. Part I. Comprising Abstracts of Papers up to July 1, 1896. New York: 1897.

THIS is a review by the committee on revision and publication of the new Pharmacopœia of the United States. The committee has made abstracts of papers relating to its work, and they will be found of interest not only to those engaged in pharmaceutical work, but to every practising physician. We note particularly the desire expressed for a more scientific accuracy in the nomenclature of chemical compounds, and the plea that there is no apparent reason why the oil from American cods should not replace that from the Norwegian fish. The Digest shows that there is great activity in the profession toward the securing of accurate compounds and simplicity of nomenclature.

THERAPEUTIC HINTS.

For Frost-bite, when the skin remains unbroken, the following combination has been highly recommended:

℞ Camphoræ	3 i
Olei cajuputi	3 ii
Ætheris	3 i.

M. Ft., linimentum. Sig. Apply locally.

For Pyrosis.—Tincture of nux vomica is recommended by Ringer as an excellent remedy for gastric hyperacidity. It should be given in 5-drop doses in a small quantity of water a quarter of an hour before eating. For the same purpose Alonzo Clark recommended simple bicarbonate of soda in 15-grain doses to be taken in water immediately after meals.

For Acute Alcoholism.—The following combinations are recommended:

℞ Spts. ammon. aromat.	3 ii
Tinct. camphoræ	3 iss
Tinct. hyoscyami	3 iiss
Spts. lavandulæ co., ...	q. s. ad. 3 ii.

M. Sig. One teaspoonful every hour.

When the acute symptoms have been relieved the following may be substituted:

℞ Pulv. capsici	gr. xxiv
Quininæ sulph.	gr. xxxvi.

M. Ft. cap. No. xii. Sig. One capsule before each meal and continued for several days.

Should insomnia be an element administer the following:

℞ Sodii bromidi	3 ss
Chloral. hydrat.	3 iiss
Syr. aurantii cort.	3 ss
Aquæ, ...	ad. 3 iv.

M. Sig. A teaspoonful at bed-time and repeated during the night if necessary.

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ORIGINAL ARTICLES.

WHAT CONDITIONS INFLUENCE THE COURSE OF SYPHILIS?¹

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IN approaching this subject the first question which confronts us is, What is the syphilitic virus? Unfortunately we are not able at this time to answer this question in an absolutely scientific manner. Though our knowledge is very precise as to the *materies morbi* of diphtheria, tuberculosis, leprosy, and many other infectious diseases, we are as yet grouping in the dark as to the essential nature of the syphilitic poison. Coincidentally with the amplification and greater precision of our knowledge of acute and chronic infectious diseases, much light has been thrown upon the pathology of syphilis, but the knowledge comes to us indirectly by means of the study of the analogic evidence presented by acute and chronic infective processes. Thus, in diphtheria there is a demonstrable micro-organism which attacks the system in one spot, most commonly the throat, and produces fever, headache, malaise, neuralgia, paralysis, albuminuria, and general toxemia. The analogy between syphilis and diphtheria is very striking, but it lacks many features which are approximately supplied by such chronic infective processes as tuberculosis, which begins as a local infection, and produces marked cell changes resembling in a measure, those produced by syphilis and leprosy, the initial lesions of which we know nothing. Leprosy, in its chronic proliferative course, strikingly resembles syphilis. This analogic evidence—and much more could be offered—points strongly in the direction of syphilis being a disease originated by a virulent bacterium, and it seems singular that, when the initial lesion is so readily procurable for microscopic study, we have not yet the necessary knowledge or means of demonstrating the morbid element. However, I think it warrantable to assume that syphilis is a chronic infectious disease due to an as yet unrecognized microbic cause.

Though we know nothing of the syphilitic bacte-

rium, we fortunately are in possession of minute knowledge of the morbid anatomy of the initial lesion, and this teaches us much more than we formerly knew of the intimate processes of syphilitic infection. I will here briefly summarize the results of my studies,¹ in which I was aided by my friend Dr. Ira Van Gieson, and which I think are entirely trustworthy.

The initial lesion, from which the following facts were derived, was excised by me four days after its first appearance and eighteen days after the infecting coitus, consequently it presented the very earliest appearances of syphilitic infection which can be studied by means of the microscope. The chancre appeared as a minute red erosion, and consisted of a circumscribed mass of tissue resembling in structure ordinary granulation tissue, but under and beyond it, when examined microscopically, there was a very marked change in the condition of the blood-vessels. This change consisted in the distention of the perivascular spaces with small round cells. Nearly every vessel examined, both arteries and veins, was in this way enveloped by masses of small round cells, forming a sheath like a coat-sleeve around the arm. Besides this condition of the perivascular spaces there was a change in the endothelial cells lining the arteries and veins, which were swollen and seemed to be proliferating. In two or three places the process had gone on to such an extent as to produce thrombi of the medium-sized veins. Careful study showed that it was very probable that these perivascular cell-clusters were produced by the proliferation of the connective-tissue cells of the adventitia of the vessels or by the proliferation of the same cells, just exterior to the adventitia. The point deserving of attention, and it has been further demonstrated in the examination of chancres from other patients, is the extremely early and far-extending involvement of the blood-vessels. Although the primary sore was but of a few days' duration, very small, and under the microscope was of such limited and circumscribed extent, the blood-vessels were very extensively surrounded by cell investments at a considerable distance—fully an inch—from the ulcer. The microscope also showed how deep-rooted syphilis is at the very beginning of the sore, having extended along the perivascular lymph-spaces, and how futile it is,

¹ An address read at the Twenty-first Annual Meeting of the American Dermatological Association, Washington, D. C., May 6, 1897.

¹ *Medical Record*, July 4, 1891, and "The Pathology and Treatment of Venereal Diseases," pp. 528, *et seq.*, 1895.

as experience has already shown, to attempt to abort it by excising the primary sore. Apparently, judging from the appearance of the vessels in this case, their involvement begins before the appearance of the sore. The microscopic analysis of this and other cases also shows how it is that the infection of syphilis travels from the primary sore and infects the body. The perivascular spaces are lymph-spaces which communicate ultimately with the inguinal glands, and the enlargement of these glands is undoubtedly due to the advancement of this cell proliferation along the perivascular spaces until it reaches them. The same process extends from the inguinal to other sets of glands or lymphatics.

The process of syphilitic infection, therefore, is one of constant growth and diffusion from the beginning. In the very first days of the existence of the chancre the poison is deeply rooted in the subcutaneous tissue; it is in a most active state and progresses along the course of the vessels until it reaches the body, and then infects the whole economy. In consequence it is very certain that excision of the chancre will not cause the abortion of the disease. Reasoning by analogy, we are warranted in assuming that this new, highly infectious, and rapidly growing tissue gives off, probably by means of its microbes, a poison which diffuses itself through the system. We have then in syphilitic infection two orders of morbid changes: (1) the heterologous new cells; (2) the diffusible poison.

In many diseases of microbic origin the severity of the attack depends upon the activity and the quantity of the virus inoculated or received. When the microbes are derived from active and exuberant lesions they usually produce an intense disease in vulnerable subjects, but when the virus is attenuated or when the microbes are in a weakly state (involution forms), then the resulting invasion is less severe. To these features offered by other infectious processes syphilis does not seem to present points of resemblance. In other words, we know nothing of the mildness or malignancy of the syphilitic virus, and extended clinical observations made by many authorities go to show that a virus which produces severe syphilis in one individual may only produce a mild form of the disease in another. Therefore, in syphilis it may be said without fear of contradiction that the potentiality of the poisonous dose is about the same whether it be derived from a severe case of syphilis, or from a mild one. I could offer the histories of many scores of cases in support of this statement, but will content myself with briefly narrating one. Many years ago I had under my care a very strong young man who had a small and insignificant chancrous erosion on the penis. This young man,

in whom the secondary stage was very mild, contaminated a rather anemic young woman who developed a well-defined vulvar chancre in which there was a slight tendency to sloughing. This patient was attacked by the malignant form of syphilis which resisted intelligent treatment and careful nursing, and she died six months after infection. While she was in a very debilitated state, just before the onset of the malignancy which terminated her life, she had connection with four young men and infected them all with syphilis. Three of these individuals had mild secondary syphilis, and in only one was the disease somewhat severe. In all four cases the initial lesion was small and not much indurated. My belief on this question is in accord with the opinions of many authorities. Clinical observation has also proved that the potency of the virus is about the same whether it be derived from the initial lesion, a secondary lesion, or the blood.

From the foregoing statement of facts it seems warrantable to conclude that there is a well-marked uniformity in the infectious quality of the virus no matter from whom it may be derived, and that this poison may produce in some subjects a mild and in others a severe form of syphilis. It, therefore, logically follows from what has been stated that the benignity or severity of syphilis is determined by the condition of the individual.

Clinical observation clearly shows that in some patients, owing to partial immunity, the syphilitic poison meets with such resistance on the part of the tissues that it makes but a slight impression, while in others a marked susceptibility to its action exists, and a more or less severe form of the disease is produced. It has been claimed that, from certain features observed in the chancre and during its course, we may draw prognostic points as to the mildness or severity of the subsequent course of the disease. It has been said that a small, slightly indurated chancre is usually followed by a mild attack of syphilis. This statement may apply to some cases but certainly not to the majority. It is not uncommon to see all grades of severe syphilis follow an insignificant initial lesion which might have undergone involution in ten days or two weeks, and have left little if any trace upon the part attacked. How common it is to see severe and extensive syphilitic lesions in persons who never knew they had a chancre, and in whom it must have been very small! The truth is that both mild and severe grades of syphilis may follow small initial lesions. It has also been claimed that large and deep primary lesions invariably lead to severe forms of infection, but this statement is only partially true. I have seen many cases of mild syphilis follow a very extensive chancre, and

have also seen instances in which two or three parts of the body were the seat of chancres (penis, lip, and finger, or penis and lip, or other part), and yet the course of the disease was not at all severe. Indurating edema may complicate a chancre (presumably as a barrier thrown out by Nature against the threatened invasion), and involve the whole penis and even the scrotum, or one or both labia, and then this great swelling may be regarded as indicative of severe syphilis. Such an assumption is a mistake, as I have had the opportunity of seeing in very many cases.

Ulceration, phagedena, and gangrene, attacking the initial lesion, have been claimed to be ominous signs of a severe attack of syphilis. Extended clinical observation shows that this assumption is not fully warranted. Destructive ulceration of any form or gangrene attacking the initial lesion is always the result of contamination with pyogenic microbes, usually caused by carelessness and uncleanness and also by intemperate cauterization, and they are to be regarded as disquieting accidents and not as indices of the malignancy of the initial lesion or as forecasting a severe attack of syphilis. In some cases of phagedena and ulceration of the initial lesion a temporary condition of ill health is produced, but careful treatment will soon remove this accidental complication. It is also claimed by some authors that extragenital chancres are the forerunners of severe syphilis. This view is certainly based on the observation of a few exceptional cases, and is not borne out by extended investigation. I have reached the conclusion (and it is in accord with that of Fournier, Feibes, Haslund, and others), from the statistics offered in seventy cases observed and recorded by me, that the course of syphilis averages about the same in cases beginning in genital or extragenital lesions. It not infrequently happens that the nature of an extragenital chancre is not recognized or that it runs its course unobserved by the patient. In such cases the resulting syphilis may not be treated, or it may be improperly treated, and then a degree of severity may result. This view of the malignancy of extragenital chancres is in some instances, of which I have seen many, due to the hue and cry raised by infected medical men and nurses who, having innocently contracted the disease, take kindly to the mild form of martyrdom with its resulting sympathy from friends and acquaintances. They usually exaggerate their symptoms and give the impression that they are suffering from a severe form of syphilis.

Fortunately for the human race, syphilis in the great majority of cases is contracted by young men between twenty and forty years of age in whom the vital processes are active and whose health as a rule is good. Such patients are naturally capable of

withstanding attacks of various diseases, but some are more resistant than others. According to my observations it may be said that syphilis is much less severe to-day than it was thirty years ago. We no longer, not even in large syphilitic clinics, see so many cases of malignant, of severe, and of malignant precocious syphilis, nor do we meet with the more profound and grave tertiary lesions by any means as frequently as we did a quarter of a century ago. This diminution in the severity of the disease is largely due to our improved methods of treatment, to better sanitary and nutritive conditions, and to the greater attention which is paid to cleanliness and antisepsis. But further than this, there undoubtedly exists to-day in the tissues of many individuals a greater resistance to syphilitic infection than was possessed years ago. In other words, in many people a moderate condition of immunity against syphilis exists, which is due to the changes in the tissues and perhaps in the blood induced by syphilis in their more or less remote ancestors.

We are now in the position to study the course of syphilis in healthy subjects and to consider the influence of other diseases and of unsanitary conditions upon it. In a general way it may be stated that the larger number of persons who contract syphilis are those who are in average good health and have not grown old. In a smaller number the standard of health is less high, and in many patients certain morbid conditions exist which are due either to disease or bad habits, and which lower their power of resistance. Extended clinical observation shows very clearly that syphilis when untreated by mercurials runs a somewhat uniform course. Following the chancre, in due time the secondary cutaneous and mucous-membrane manifestations appear, and remain for a short or long period, and then they seemingly undergo resolution. Next a more advanced form of lesions, such as large papules or papulotubercles, are observed, and these may in time wither, and later on—in months or years—true tertiary lesions may develop. The tendency of syphilis, luckily for mankind, is to expend its force on the superficies of the body, and it seems very probable, particularly in healthy subjects, that the lesions of the deeper parts are, in the main, due to various determining causes, such as traumatism (bones, joints, tendons, and fasciæ), antecedent pathologic processes (liver, spleen, kidneys, intestines, and testes), and to a neuropathic tendency (cerebrospinal affections). When any of the above-mentioned causes exist in untreated syphilis, the grave order of lesions may follow or coexist with the more superficial ones. Some of these mild cases, in persons previously healthy, sooner or later become grave,

and even malignant, but in general the gravity or malignancy of syphilis is due to some inherent defect in the constitution of the patient, to some diseased condition, or to a lowered state of health due to privation or bad habits.

The pathology of early syphilis is revealed to us in the cell-infiltrations constituting the essential lesions which are distributed in a symmetrical manner over the whole body. With the evolution of this new growth a diffusible poison is developed which is carried throughout the entire system and gives rise to the various phenomena (fever, debility, emaciation, headaches, neuralgias, arthralgias, periosteal pains, splenic engorgement, and sometimes pleuritis). With the destruction of the newly formed cells by treatment the tangible lesions undergo involution and disappear, and in proportion to the completeness of their cure so does the poison secreted by them grow less and less in potency and quantity. When a perfect cure does not take place, some of these morbid cells remain (in all probability in little masses around the blood-vessels, and not stored in the ganglia), but as they grow old they lose their vitality and increase slowly, and, having lost much of their virulency, produce very little, if any, of the diffusible poison. This is what takes place in tertiary syphilis, in which the new growths are indolent, aphlegmasic, and show a marked tendency to localization and to asymmetrical distribution. The gumma is the direct and feeble descendant of the virulent round-cell infiltration of the secondary stage of syphilis. Such, in brief, is the nature and extent of the syphilitic invasion, which, if unchecked, goes on more or less rapidly to produce tissue-change, to lower the standard of vitality, to attack organs whose integrity is essential to life and happiness, and to produce serious conditions, and even death.

(To be continued.)

A CONTRIBUTION TO THE SYMPTOMATOLOGY OF HAY-FEVER.

By WILLIAM M. CAPP, M.D.,
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THE symptoms of so-called "hay-fever," a disorder more graphically designated by Sajous as hyperesthetic rhinitis, and by others as vasomotor rhinitis, have been so often and so fully described that they have become familiar and are easily recognized. Amid the diversity of manifestations, certain underlying systemic conditions may be said to prevail. One of the latter, connected with the nervous system, has not been dwelt upon, if indeed, ever pointedly mentioned by the writers upon this subject, who have been, on the whole, so indefatigable in their observations. I allude to a certain tonic

spastic condition which, although slight in character, is general, rather than confined to limited areas, and in large measure accounts for many symptoms of the disease. It is not intended here to inquire into its cause, but it may be remarked that a central nervous irritation is probably caused by the presence of disturbing elements in the blood, presumably products of faulty or imperfect metabolism, which should have been eliminated from the system. Thus, may originate nerve currents with innumerable reflexes, which, in the disturbed equilibrium of the system are, in a measure, uncontrolled by the ordinary inhibition. In this manner the hyperesthetic condition of the mucous membrane of the nose, the fauces, and the palate may be accounted for. Indeed, the general cutaneous surface becomes sensitive, and its functions disturbed. Doubtless the mucous membranes are likewise affected. Patients with this disease experience during exacerbations a feeling of nervousness, a general state of tension, restlessness, and discomfort, and mental and physical excitation, with alternating periods of consequent depression, and an inability to command placidity or self-control. It is as if the vasomotor mechanism, by overaction, disturbed the free performance of function, so that nutrition and elimination throughout the body are interfered with.

The tonic spasm persists for a time, gives way, and is succeeded by an opposite condition of relaxation. A fit of sneezing or other slight cause may bring this about. Then secretions are unlocked and there is an excessive discharge from the nose, eyes, etc., possibly looseness of the bowels following constipation, excessive bronchial secretions subsequent to a dry and irritated condition of the membrane, perspiration uninduced by exertion after a period characterized by a dry, feverish skin. Probably all the involuntary muscles of the body reflect more or less the nerve disturbance, and doubtless other manifestations in the way of symptoms might be recorded. One of interest relating to the muscles of accommodation of the eye the writer has observed in his own case.

About six years ago, owing to a presbyopic condition, it was necessary to adopt during reading a +0.50 D. spheric lens, and at the same time to correct a moderate astigmatism which had been previously overcome by the power of the eye, and the existence of which had until then been unknown. A lens was worn constantly for near work, and was generally satisfactory except during an attack of hay-fever, when it seemed to augment the symptoms, and, indeed, was so objectionable as to cause annoyances relieved only by dispensing entirely with its use. During several attacks the usual daily near use of the

eyes was more comfortably accomplished without artificial aid than with it. During the last two periods the eyes accepted the cylinder correcting the astigmatism, but did their work better without the spheric lens.

If we suppose that in this case the presbyopia was relatively more dependent upon an asthenic condition of the ciliary muscle than upon an inelasticity of the lens, the increased vigor of the muscle at the particular periods may be attributed to the general exalted condition of the nervous system attendant upon hay-fever through the tonic spastic condition above mentioned. The writer has not heard of other similar cases, although doubtless there are such. It is a matter of common observation that the muscle of accommodation may sometimes manifest more strength of action when the general health is unusually vigorous, but in the case described, its increased vigor is manifested at a time when the systemic condition is rather one of depression.

THE ABUSE OF MEDICAL CHARITY.¹

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IN presenting this subject it has been my object to place before you a critical review of the recent literature, rather than to present merely individual views. To the sociologist there is at the present time no subject of greater interest or one more worthy of careful consideration and study than medical charity; or, rather, of its abuse, as it exists to-day, and the remedy which must be applied for its correction, so that the greatest possible good may be accomplished with the least harm to those who receive, as well as to those who give. It is only necessary to call attention to a few facts to demonstrate conclusively that, as at present administered, medical charity is demoralizing to both recipient and donor, and that the charity mentioned in the Good Book has been disregarded during the last quarter of the century now rapidly drawing to a close.

It was recently stated in an editorial in a leading medical journal that a person asserting that one-third or one-half of the inhabitants of this city are paupers would be deemed a person of unsound mind; yet it has been said by Dr. Stephen Smith, in a report to the State Board of Charity, that during 1895, 837,971 persons applied for, and received free medical treatment at 105 dispensaries in this city, and that during the same period 1,418,847 free visits were made to these dispensaries; also, that during the same year 78,000 persons received free medical and

surgical treatment, including free board, lodging, nursing, drugs, surgical dressings and appliances, making a grand total of 915,971 persons who claimed during one year to be unable to take care of themselves, out of a total of 1,870,000, or something more than 49 per cent. of all who live within our borders. Dr. Smith has also been credited with the statement that during the period from 1791, when the first dispensary was established in New York, to about 1870, the applicants for medical charity bore a ratio to the total population of only 1.5 per cent., against the present ratio of 49.7 per cent. Surely these figures are alarming, if correct, and, from the well-known reputation of their compiler for care and accuracy, there is no ground on which to question them. It is a significant fact that about the time when this increased ratio began to be manifest was the period which witnessed the establishment of the so-called provident dispensary, both in this city and London. Again, when we consider the amount of money expended in this city during one year for charitable purposes, it seems certain that something is wrong; either a larger number of the people are unable to help themselves than should be the case, or the public and private money contributed for this purpose is sadly wasted.

The *New York Herald* of June 6, 1897, contained an editorial, in the course of which was said:

It is wholly within the mark to say that Greater New York spends \$50,000,000 every year on charities. The figure is stupendous, and the statement seems incredible, but a very little study, not of results, but of official reports, will fully justify both the one and the other. In round numbers New York proper, that is, the lesser New York, devotes in the neighborhood of \$2,225,000 to its own reformatories and charitable institutions. In addition to this it appropriates nearly another \$2,000,000 to the independent asylums, hospitals, reformatories, and other aid societies. This makes the total of \$4,000,000 to begin with. To this may be added another \$2,000,000, devoted to the same uses by other municipalities now comprised in Greater New York. This \$6,000,000 is only a mere fraction of the whole. There are within the boundaries of Greater New York over 3000 institutions devoted to the help of those who cannot help themselves. Of these, but very few receive and disburse less than \$1000; the disbursements of many run far into the hundreds of thousands.

The recent action of the County Medical Society with reference to the free dispensaries and the frequent hospital abuses throws some light on the mystery as to where all the money goes. It shows very clearly that in this feature of charity administration money that is intended for the poor goes, in a surprising number of instances, to people who are not poor—to people even who comparatively are rich. The public dispensary, in other words, and the public hospital, where some generous philanthropist has provided for the essentially poor free medicines and free medical attendance, are either so loosely or unwisely conducted that they are working in the community a sort of social revolution. It is getting to be no longer medical attendance and medicines free for the poor, but

¹ Read at the Fourteenth Annual Meeting of the New York State Medical Association, held at New York, October 12, 13, and 14, 1897.

free for all. If the poor can crowd into the throng of well-dressed men and women who ride up in their carriages, there is no objection to their being served. Millions upon millions of dollars have been given by benevolent New Yorkers in endowments and appliances for the free treatment of the ailments of the poor. It is conservatively estimated that fully fifty per cent. of the people who take advantage of this generosity are people whose financial position puts them wholly beyond the scope of the charity; in other words, that fifty per cent. of the donor's money is diverted from the purpose for which he intended it, and practically filched from the poor to whom it rightfully belongs. Inasmuch as a very large percentage of the sums of money which New Yorkers give in charity every year is devoted to the care of the sick, afflicted, and injured, it is obvious that these inroads of the well-to-do on the money provided for the poor alone account for a very large share of the failure with which New York's charitable efforts are met. The thousands of dollars in drugs, time, and attention bestowed by physicians upon people who have no claim whatever upon either would probably suffice to care for all the really legitimate cases of sickness and poverty in the city. If anything like a corresponding waste and misapplication of funds exists in the various other channels in which New York empties her fifty millions of dollars of gifts every year, it is not difficult to understand how so many of the helpless remain uncared for, while they starve in the midst of plenty.

The figures already quoted would seem to show that in the last twenty-seven years the ratio of those unable to care for themselves out of our entire population, has increased by 47.5 per cent., and that it is only a question of time, if this state of affairs continues, before the great majority of the inhabitants of this metropolis will demand (for what is received as a gift to-day will be regarded as a right to-morrow) not only free medical service, but free food, free fuel, free clothing, and free lodging. As has been well said, are not all these things as requisite to promote comfort and prevent suffering as medical services? A socialistic state will be reached, bordering upon anarchy. That this condition of affairs is not confined to our own locality is proven by recent reports of investigations, published in both the medical and lay press, to the effect that about 25 per cent. of the population of all large cities, both in this country and Europe, are at the present time receiving free treatment from institutions originally designed to serve the poor.

Some of the facts which have been rehearsed were presented last January to the New York County Medical Society in the inaugural address of the President, Dr. Landon Carter Gray, and, as a result, committees were appointed by the county society for the purpose of investigating the manner in which medical charities, but more especially the dispensaries, of this city are administered. A joint committee resulted. The whole matter was carefully investigated, and it was readily demonstrated that greater abuses existed than had been considered pos-

sible. It was found that little or no effort is being made to discriminate between the unworthy and the worthy, and that practically all comers are welcome and receive treatment regardless of financial condition at nearly all of the 116 dispensaries located in this city.

Dr. J. B. Huber, in an able paper on "The Abuse of Medical Charity," recently read before the Alumni Society of the City Hospital, graphically describes the clientele of some of these so-called charitable institutions. He says:

True, he will find there the worthy poor, the worthy object of charity, but he will find there also, in at least equal number, quite another sort of patient; he will find the actor, the opera-singer, the gambler and bartender, and hobnobbing amicably with these, the policeman and the clerk, and the young man who earns a respectable salary; he will find the farmer from out of town, the man who owns houses, and the prosperous business man; he may find there the broker, the lawyer, the journalist, the bicycle girl, the man who wants to know if his disease will interfere with horseback riding, and the lady who has left her barouche around the corner; and he may even run across a stray railway president. Besides these he will find there those who, at considerable preliminary expense, exhibit upon their faces the penalties which Venus inflicts upon her too ardent devotees, and he may find there also the demi-mondaine, with the rich backer who, it is rational to infer, receives as much money in a night as many a medical man in the city earns in a month in the practice of his profession. This does not by any means exhaust the list.

Again, Dr. George F. Shrady, in the course of an elaborate and instructive article, entitled "A Propagator of Pauperism: The Dispensary," published in *The Forum* for June, describes the scene which may be witnessed daily at the institution to which he has given the sobriquet of "the diamond dispensary." He says:

The reception-room held about two hundred at a time; nobody was turned away; fully 50 per cent. of the applicants were well dressed, and 10 per cent. were finely dressed. Three women wore fur coats that had not been handed down from somebody else. There was an attractive display of fine millinery, and the men, more than half of them, bore no evidences of poverty. But all obtained free treatment supposed to be given to paupers—poor persons. Such instances as the following carry with them their own moral. During the examination of a dispensary patient a roll of bills dropped from her pocket, and the doctor picked it up and remarked: "Madam, this is a free dispensary, and as you are able to pay a fee for medical advice I must decline to treat you here." "Well," replied the woman, "that money is for something else; you are paid by the city and must prescribe for me." On being assured that the doctor received no salary from any source, the patient became indignant, and protested that she was entitled to attention equally with the lady who had preceded her, and from whom she had rented her house a week before.

The *New York Herald* of June 19, 1897, in the course of an article describing the visit of a reporter to a well-known clinic, said:

It was stated at the clinic that during the hours named the number of patients was sometimes as large as five hundred, and that the attendance yesterday was up to the average. There was certainly a continuous stream of men, women, and children coming in, and, at a rough and conservative estimate, the total must have been very nearly four hundred. No one was seen to arrive in a carriage, nor was any finely dressed man or sumptuously attired woman observed in the crowd, but, on the other hand, those whose dress and appearance denoted an extreme degree of poverty were certainly in a very large minority. The common unsophisticated idea of a dispensary patient probably is a person who, if he is not a pauper is next door to one, a person whose earnings suffice at most to do no more than keep a poor shelter over his head, a poor covering upon his back, and enough poor food in his body to prolong life—in other words, a person actually so destitute that medical attendance and medicines must be given to him outright, or for the merest pittance, or he must go without them. This may not be a correct definition of a legitimate dispensary patient. If it is, it is difficult to resist the conclusion that not more than one in twenty-five—the pen is tempted to write, one in fifty—of the applicants treated at the ——— clinic yesterday afternoon was a legitimate patient; not more than one in fifty was at all shabbily dressed; a large majority were fairly well dressed; one-third of them, it would be safe to say, were quite presentably dressed; a few, perhaps as many as one-fifth, dressed positively well. Much the greater number of the patients were women.

The following are a few instances out of many of the abuses which have come under the writer's personal observation: A number of years ago, while serving as district physician to an uptown dispensary, he was called to see a baby who was too ill to be brought to the institution. Upon reaching the abode of the little patient's parents, he was surprised to find evidences of prosperity rather than of adversity, and as he entered the door a well dressed man walked out. On being questioned, the mother said that the man was her husband; that he had plenty of work and good pay, and that the reason she had sent to the dispensary for a doctor was because every other inmate of the house had a physician for nothing whenever they cared for one, and she thought there was no reason why she should send for a pay doctor.

More recently, the case of a man came to my notice who lives in one of the largest and finest apartment-houses on the west side of the city not far from Central Park, and who pays several thousand dollars a year for rent, and who expends many thousands for living expenses. Requiring some special advice, instead of going to the office of the specialist he wished to consult, he went to his clinic at "the diamond dispensary," saying to his wife that he could not afford to pay a fee to the doctor as his expenses were too heavy.

Another instance was that of a wealthy and prosperous manufacturer, who lives in a thriving town not more than a hundred miles away, who, having

some nasal difficulty, wished to consult a specialist at his office, but did not desire to pay the doctor's usual fee. He, therefore, borrowed some clothes from one of his employees, and presented himself at the doctor's office. When admitted to the physician's presence, he regaled him with an account of the difficulty of earning a living and supporting a family. After examination, it was decided that an operation would be necessary before the patient could experience relief. On account of assertions as to limited means, a very small fee was asked for the operation, but when it was named the patient said that he could not possibly pay it, but could pay half the amount. This was accepted, and the operation performed. The patient experienced relief from his difficulty, and has since frequently narrated this story as a good joke, and as showing the limited business knowledge and acumen of physicians. The moral turpitude involved in his action was entirely overlooked.

In an article, entitled "From Him That Hath Not; or, How the Rich Rob the Poor by Getting Medicine and Treatment at Charity Dispensaries," by Winnifred Black, in the *New York Journal* of July 11, 1897, it was stated:

I saw well-dressed and well-fed women coming and crowding the wretched suffering of poverty from the door. The same observer, upon asking one of the well-dressed women why she frequented a place intended only for the relief of poor persons, received this reply: "If other people get medicines for nothing, I guess I can." Another reply to a similar question addressed to a prosperous looking girl, was: "Spend money for doctors when I can buy ribbons with it? Well, I guess not!" And again, a smart, prosperous business woman's answer as to why she came for free treatment, was: "Aint I a widow with a child to support?"

It would seem to be needless to multiply illustrations of what is daily occurring, for the instances quoted certainly show the spirit in which charity is asked and accepted; it is largely a desire to save money without apparently thinking that self-respect is lost in the effort, or that a wrong is done to the really poor, and to the physician who is certainly as much entitled to his hire as the clergyman or other members of the community, as he too has social obligations to fulfil.

Dr. Schweck, in the *Philadelphia Press* of June 11, 1897, in the course of a paper, entitled "The Dispensary and the Abuse of the Poor," says:

The woman who makes shirts for a dollar a dozen, the girl who stands behind a counter for four dollars a week, and the scrub-woman with others dependent upon her, who gets a dollar a day, all constitute our worthy poor. They have themselves and others to board and clothe; their time is worth more to them than that of the most successful business men. These are the people that are eligible for dispensary service, and should have the very best that can be given them. Here, to this place of charity, comes also

another class, a distinct class, the moral and lineal descendant of the ghouls, that follow in the wake of an army and rob the fallen soldiers; it is a class of people who constitute the vanishing point in the perspective of human affairs; they have money, but that is all. People of means who go to charity dispensaries and receive treatment free of charge, representing themselves to be too poor to pay for medical services, commit a criminal act; for they obtain what they are not entitled to, and do it under false pretenses.

Referring to the abuses of medical charity in other cities, the *New York Times* of August 16, 1897, says:

Hospital abuses in Chicago must have reached a point calculated to astonish even those New York doctors who have been so vigorous and persistent of late in denouncing similar wrongs that exist here. From a single Chicago hospital 245 undeserving recipients of charity have just been rejected; some because there was little or nothing the matter with them excepting a yearning for free food and lodging, and the rest because they could well afford to pay for the services of the private physician. The patients of the latter class are numerous enough here, but, as far as known, New York hospitals have not as yet become the resort for tramps to the extent to justify their name by tramping.

It is the writer's belief, founded upon his experience in the local hospitals, that a careful investigation of the inmates would reveal a similar condition of affairs here, if not a worse one.

In the *New York Times* of October 12, 1897, Superintendent Bauer of the Department of Public Charities of this city is credited with having reported to the Board a saving of \$1,313,471 in fifteen months as a result of investigations into the claims of the inmates of the various private charitable institutions receiving city aid. The bills of the institutions referred to showed that 26,561 persons were being supported, and the investigation demonstrated that 13,285 of these were unworthy objects of charity.

An instance cited by a commissioner as evidence of the necessity of making a careful inquiry into the claims of applicants for relief was that of a boy whose name had been carried for seven years on the books of an institution as a city charge, and \$104 collected annually from the city for his support; whereas he had in reality been living on a farm during this period of time.

The *Lowell* (Massachusetts) *Mail* of September 23, 1897, referring to the same subject, said:

Boston is having trouble with abuses of free dispensaries, as New York and other large cities have had for some time. So many rich patients go to the dispensaries that the poor, who really need them, are crowded out, and the struggling practitioners, who really need rich patients, are crowded out too. Stories have been told of people driving in carriages to the doors of the dispensaries to receive treatment gratis, all of which goes to prove what has often been stated, that those who are willing to ask for charity are not generally those who need charity the most.

The latest form of dispensary abuse has recently been reported in the *Medical Record*, which says:

A report comes to us, as we are about to go to press (as the country weekly puts it) to the effect that a physician has been dismissed from one of the most fashionable dispensaries in a neighboring city—of course, it could not occur in New York—for abstracting a 50-dollar bank-note from the purse of a patient. The pocketbook was left upon the dispensary desk while the lady entered the adjoining room to prepare for examination. The plea made to the governing board by the physician was, that he had been overworked, having treated over four hundred patients in the dispensary for the three days preceding the temptation which caused his fall, and during this time he had been unable to procure but one full meal. Hunger, and the means at hand to satisfy it, may have proven too strong a combination for his over-wrought nerves. This naturally did not weigh with the board. The clientele of the institution must be made to feel that while the patron is undergoing treatment his valuables are safe. The argument was used by one of the governors that, if the patients' money is to be taken from them they might as well go to a physician's office and be done with it. The crime of robbing a dispensary patient cannot be too severely punished, as such acts will deter many patients of wealth from patronizing these institutions. It is, therefore, most fitting that the culprit in the present instance will be forced to take his chances for the future in private practice.

It is a well-known fact that ever since the world began man has been seeking to obtain something for nothing, or without effort; and it is equally agreed that this is an immoral desire, and ends in disaster to those who indulge and practise it, as well as to those who aid and abet. From the evidence already adduced it cannot fail to be seen what an injurious work the so-called indiscriminate medical charity is doing, and that its tendency is to corrupt individuals and pauperize whole communities. The receiving of free treatment by those who are able to pay actually robs the poor, as only a limited number of persons can receive proper attention.

Dr. G. M. Roe, Medical Superintendent of the Boston City Hospital, in a communication to the *Boston Herald* of June 12, 1897, said:

It is a generally accepted fact among people who have had large experience in doing charitable work, that the first thing a man or woman will accept as charity is medical attendance. They will accept the free services of a doctor when you could not prevail upon them to accept rent or fuel, or anything of the kind, as a gift. The acceptance of gratuitous medical attendance is the first step towards pauperism. There is already a tendency towards what is generally known as "nationalism," a belief among the common people that the city and the State owe them a living, and that medical attendance, among other things, should be furnished by common taxation, regardless of the financial standing as individuals.

Dr. J. J. Stevenson, in the course of a communication on this subject to the *Mail and Express* of May 20, 1897, says:

One cannot shut his eyes to the terrible injury done to the poorer people by this perversion of trust. If food be

abundant and obtained without labor, it is wasted; if money be obtained without labor, it is wasted; "easy come and easy go" applies in both cases, and equally so to health. If recovery from disease be secured at the expense of self-denial, the memory of the cost will lead, in ordinary cases, to care, that recurrence of disease and attendant expenses may be prevented. But if the careless feel that treatment, medicine, and even diet may be had simply for the asking, there can be no reason for resisting the natural tendency to neglect the laws of health. The indiscriminate medical charity is but one phase of the morbid philanthropy which seeks to be doing something which appears to be good—a philanthropy which has done much to degrade man; it has done much to increase the dissatisfied class, and has been the efficient ally of the social agitator. The thoughtless charity of 1873 did much to give America the tramp; that of 1883 increased the horde; that of 1893 and 1894, in this city, converted great numbers of worthy families into mere receivers of alms, who soon lost self-respect and turned upon their benefactors with bitter reflections upon the charity that could provide such food and such clothes. Discontent no longer mutters, but speaks so boldly that the politicians are dismayed while the demagogues exult. The rights of ownership to property are denied because a *proletariat* exists. We are told again and again that the rich have acknowledged themselves as responsible for the wretchedness of the poor, having provided food and clothes in time of need, having established hospitals, dispensaries, and diet-kitchens for the sick, and distribution having been made in great part without careful inquiry as to the absolute need, and not requiring anything in return. It is not surprising that the reckless poor see in such careless giving an acknowledgment of the unequal distribution of wealth, and believe that it is founded on injustice; nor is it strange that the anarchist's cry is not for opportunity to earn by labor, but for such distribution of wealth as may enable all to enjoy the luxury of idleness.

Another physician, writing on this same subject in the *New York Evening Post*, said:

And there is another side to the story also. The free dispensaries, which are such worthy charities in theory have, through several causes, become dangerous menaces, not only to us, but to society in general; they absolutely encourage begging and dependence on charity. People who can well afford to pay for their treatment, and for medicines, have become so hardened that they will stand in line to receive their drugs for nothing; they will be indignant if it is suggested to them that doctors cannot afford to give them aid for nothing any more than any other class of men. It seems to them that we are employed by the city to help them, and in many cases they are not even grateful. Think of a dry-goods man who would be compelled to open his doors to a trade, and devote sometimes a day to dispensing his goods to them—even if the goods were paid for, his time would be lost. Where is the justice in making a distinction between the doctor and the merchant?

Dr. Douglas Hunt Stewart, who has made a careful study of the subject of dispensary abuses, in the course of a communication to the *New York Tribune*, says:

The financiering of many medical charities gives the impression that it is proper for a citizen to receive something for nothing. This is the teaching of socialism, which the "*Tribune*" has always opposed, and it is the code of the counterfeiter. The question of right does not enter into

the matter at all. Legally, no man has a right to steal a loaf of bread to feed his starving family; there may be mitigating circumstances, but the law brands such an act as theft. Is he any less guilty who steals a physician's services under vague pretenses? The only man who claims the right to receive alms is the highwayman, who puts a pistol to your head, and exclaims: "Your money or your life." Another class of recipients of charity may be compared to the street beggar who simply asks for money, and trusts to effrontery and persistence to obtain it. The third class would be the deserving poor whom everyone wishes to help, but who are too timid or too proud to avail themselves of the aid provided. This last class the dispensary often treats with scant courtesy, and deprives them of time and services necessary for the relief of their ills. It may be as hard for the worthy to raise the 10 or 20 cents demanded as for the moneyed pauper to raise as many dollars, yet the latter is the persistent seeker for free treatment to the detriment of those for whom the dispensaries were founded.

Again, in the course of an editorial in the *Evening Sun* for May 26, 1897, entitled "The Physician and the Dispensary," it was said:

Leaving the physician and the fee out of the question, surely it is right that the medical attention offered the needy should not be claimed by others. Many of the hospitals and dispensaries intended for the relief of the poor are supported by public money and private gifts which should not be devoted to those who can pay for medical advice. To permit knowingly such an abuse is entirely indefensible, and is in the nature of a breach of trust. It is besides an encouragement to fraud, and an incitement to that system of getting something for nothing, which may be termed "dead-beatism," and, therefore, it is immoral. The most extreme form of socialism when compared with the use of free hospitals by the well-to-do is laudable and commendable.

From what has gone before, it appears that not only is medical charity abused in all large cities, but this abuse is encouraged by loose and careless methods, if not from worse motives. The writer has been frequently told by physicians connected with dispensaries that they were well aware of the fact that well-to-do persons applied for free treatment, and that they were not sent away because it was known if they were turned off they would go to a rival concern and receive the desired treatment there. Consequently, other things being equal, they preferred to have as good a class of patients as possible. We have seen, as Dr. Colton has said, "that some patients are compelled to apply from a desire to save money at the expense of self-respect; others while paying for the treatment of ordinary diseases think that they cannot afford the fees of specialists; while another class is made up of persons sent to hospitals by physicians who do not care to operate; and a fourth class consists of taxpayers who imagine that they have a right to resort to institutions which they help to sustain."

There can also be no reasonable doubt that we physicians, as well as the managers of dispensaries,

are responsible in many ways for the existence of the present lamentable conditions.

In the writer's opinion, the first step which should be taken toward remedying the existing abuse should be an effort to educate the laity to believe that medical professional services have a pecuniary value, and that it is morally wrong for those able to pay even a moderate fee to try to get these services for nothing.

It would be a great aid in this direction if physicians connected with charitable institutions, in whatever capacity, were paid for their services. There certainly appears to be good reason why they should, and none why they should not be compensated. In this connection I will quote the following extract which appeared some time since in the "*Evening Post*:"

There is no more reason why the medical services rendered by the house-staff should go unpaid than there would be for trying to get for nothing nurses, attendants, rent, coal, milk, drugs and druggists, clerks and superintendents. The laborer is worthy of his hire, and if a thing is worth having, it is worth paying for. The physicians of this city are subjected to as deleterious a sweating system as any body of East-side tailors.

It has come to the writer's notice a number of times within the last few years, that members of the house-staff of the hospital, of whose visiting staff he is a member, though bright and well-educated young men who have secured their positions by reason of passing successfully a competitive examination, have been obliged to resign because they were only supplied with board and lodging for six months out of the eighteen months which the service calls for—they being unable to provide for themselves. There is certainly something wrong with a system which makes such sacrifices necessary, especially where a man is required to be constantly employed in the city's interests from 9 A.M. to 5 P.M.

A law should be enacted similar to that introduced by the joint committee already referred to, and which was passed unanimously by both houses of the legislature on April 14, 1897, but which failed to receive the signature of the Executive. This bill would have placed all institutions which dispense medical charity in this State under the direct care and supervision of the State Board of Charities, and, through them, of the local boards. These local boards should investigate the financial condition of all applicants. Of course, emergency cases should be treated first and investigated afterward. In speaking of this bill in its editorial column on May 26, 1897, the *Evening Sun* said:

With regard to the physician's attitude toward the abuse which the County Medical and other societies are fighting, some consideration is due him. Much of his labor and time are given gratuitously. Some of his patients are never able to pay him, and he does not press

them for payment, in which respect he is unlike the lawyer, who seldom fails to get his own. Others of his patients, it may be added, refrain from paying him so long as payment can be deferred, or even defraud him. Public opinion will, therefore, support the physician in his contention that the well-to-do patients of free hospitals are morally bound to go to him for advice.

In speaking of the investigation of the applicant for medical charity, the *Boston Herald* of June 12, 1897, said:

In Boston at present the instances of the abuse of medical charity appear to be far fewer than in New York or London, but it is none the less a fact that in this city, as elsewhere, there is reason for reform. This, it has been suggested, may be accomplished by two methods—popular education and more stringent regulation for the admission of applicants for hospital and dispensary treatment. If the people are more fully informed as to the investigation which each case receives before admission to the hospital, and if that investigation always involve something more than the mere statement of the patient that he or she is unable to pay, there would probably be fewer applicants for free treatment, and the private practice of physicians would be increased. Not long ago a man was operated upon gratuitously in one of the city hospitals, and was cared for also without charge in a ward for several weeks after the operation. He had declared his inability to pay for his treatment. The doctor who attended him realized the seriousness of the case and devoted all his energy and skill, as well as a great part of his time, in effecting the cure. About a week after the patient was discharged the doctor received a letter of thanks from him, and an invitation to visit him in New Hampshire and enjoy a few days of woodcock shooting. The writer enclosed a photograph of his home, which the camera depicted as a finely kept country house with a large stable in the rear. The lawn was ample and closely trimmed, and in the foreground of the picture several handsome horses were being held by stable-boys. The doctor did not accept the invitation, but he keeps the picture where he can see it, as a constant reminder that "all things are not as they seem." In this case cream masqueraded as skimmed milk.

Dr. F. T. Roger of Providence, R. I., in a practical and instructive paper before the American Academy of Medicine at Philadelphia, on "The Results of a Year's Experience in Endeavoring to Lessen the Dispensary Abuse in the Rhode Island Hospital," said:

The method adopted was to prominently display at the entrance of the dispensary a large placard stating that the services of the dispensary were given only to such patients as were too poor to pay, and that no others would be treated. There was the same statement on the case-card given the patient, and as a presentation of the card was an essential for admission, this fact was forcibly impressed upon all applicants for gratuitous service. Exceptions were made to this rule in emergency cases, such as recent accidents, cases of sudden illness, and cases in which a doubt existed as to ability to pay, and where delay in treatment would work hardship; and to the ignorant foreign classes who could not understand hospital rules. The plan has been successful, and during the year 1932 applicants were rejected, thus weeding out forty-one per cent. of unworthy applicants. The receipts of the hospital have been the same, and it is unfair to conclude that

the hospital is in any sense poorer; it has done less work, and has done quite as much in relieving suffering among the deserving poor. Those who failed to come, having a real ailment, must have consulted a physician, and presumably paid for his services."

The above plan was also advocated by Dr. Emma B. Culbertson, in a recently published article in the *Bulletin of the American Academy of Medicine*:

It should be a misdemeanor, punishable by a fine, for any one to receive free medical or surgical treatment by reason of false representation as to their financial condition, and applicants should be required to sign a printed slip declaring their inability to pay. By so doing, if they prove upon investigation to be amply able to pay for what they have received "they have thus incriminated themselves by declaring over their signatures that they have obtained by false pretense that to which they were not entitled."

Charitable institutions should not be allowed to charge nominal sums for medical and surgical treatment, nor should they make any charge for medicines or appliances, as such charges seem to ease the public conscience and make the individual believe that he is paying his way, and, therefore, has a right to go. It has recently come to the writer's knowledge that a lady, living in a large and fashionable apartment-house, visited a dispensary located near Fifth avenue, and where a charge of a dollar a month is made. Upon being taken to task by a friend for having visited a place intended for poor persons, the lady replied that needing a specialist, and not knowing where to procure one, she had visited that dispensary and had paid all that she was asked; and that if the fee had been twenty dollars instead of a dollar, she would have willingly paid it.

Dr. Douglas H. Stewart, in a letter to the *New York Tribune*, dated June 2, 1897, on the subject of the misuse of trust funds involved in present methods of management, says:

We desire to see that money left to institutions by will for specific purposes is applied in accordance with the intention of the donors. We believe that the bill endorsed by the medical societies and favored by the State Board of Charities, was a move in the right direction to do away with very great abuse and injustice to the over-burdened taxpayer and the needy poor, and that it should have received the approbation and assent of the governor. The State Board is not the representative of the medical profession alone, but of every person, be he donor or receiver of alms; it is the accredited and legitimate guardian of funds now squandered through unreasoning sentiment for the exploited and uninvestigated needs of the so-called poor.

Summary.—(1) That medical charity, as at present administered, is an unqualified evil, and is seriously menacing our existing social conditions; (2) that the application for free treatment of those able to pay the physician a moderate fee for his services robs the poor; (3) that all medical charitable institutions should be under the direction and control of State and local boards of charities, who should have the power to enforce their rules; (4) that all applicants for medical charity should be investigated by local charity boards, and the unworthy excluded;

(5) that no medical charitable institution should be allowed to charge nominal sums for medical or surgical service, nor should they be allowed to charge for medicines or appliances; (6) that *all physicians* connected with charitable institutions should be paid for the service which they render; (7) that it should be made a misdemeanor, punishable by fine, for any person to receive free medical treatment by reason of false representations as to financial condition; (8) that the financing of many medical charitable institutions involves as at present conducted a breach of trust; (9) that no State or city aid should be granted to private medical charities.

AN ADDRESS.

THE CAUSES OF A DECLINE IN THE AVERAGE INCOME OF GENERAL PRACTITIONERS OF MEDICINE.

BY CHARLES PHELPS, M.D.,

OF NEW YORK;

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THE attention of the medical profession of late has been somewhat anxiously directed toward a conceded lessening of its pecuniary returns. There seems sufficient reason for believing that the average income of medical men has been seriously diminished. It is true that at the present time a certain number of specialists, surgeons, and consulting physicians in large cities receive even extravagant compensation, but a majority of the members of the profession who compose its rank and file, the family physicians and general practitioners, have suffered a grievous pecuniary loss. This loss has been especially felt in this city, and the profound impression it has produced is demonstrated by the organized effort which was made during the past winter to obtain relief by legislative enactment. Actuated by a belief that abuses of medical charity are in great part responsible for the financial depression in professional business, medical societies and a very considerable number of individual physicians in New York were enlisted in an effort to restrict the charity of hospitals and dispensaries to those individuals who are its proper recipients. This attempt to obtain legislative relief, which was so energetically and enthusiastically urged by those who are beyond the necessity for such action, as it was by those less fortunately placed in life, failed to receive executive approval, and is now referred to only as evidence of the general recognition of the reality and extent of the evil which has been assumed.

It is a mistake to suppose that the shrinkage in the revenue of the great body of physicians is solely attributable to an unwarranted increase in gratuitous aid to the sick, or to any other single agency. The causes of all notable changes in social conditions are complex, and the most effective are likely to be general rather than specific. The business of professional men has a purely commercial

¹ The President's Address delivered at the Fourteenth Annual Meeting of the New York State Medical Association, New York, October 12 to 14, 1897.

aspect, and like that of the merchant, is not only influenced by individual aptitude, but is subject to conditions beyond individual control; it is governed by the universal law of supply and demand as evidenced by the general prosperity, or financial depression of the community. Its aspect may, of necessity, be radically changed by the introduction of new economics and the application to practical affairs of new ethical standards evolved from prevalent modes of thought and forms of mental activity.

In a review of the causes which may reasonably be supposed to account for the loss of professional income, the one which logically comes first may at the same time be regarded as of most essential importance. It is demonstrable that the total amount of sickness in the community has very considerably decreased, and the aggregate of professional fees must in consequence be correspondingly diminished. If it cannot truthfully be said that people who are well do not require the ministrations of the physician, it may be assumed that imaginary illness will always exist as a measurably fixed quantity, and that the number of those who are really ill primarily determines the amount and variation of the physician's annual revenue. The improved condition of the public health, which has resulted from advances made in the study of pathology and of general hygiene, and from the practical application of such knowledge in public sanitation, is beyond question. The discovery of the pathogenic germs as the direct causes of disease and of the conditions under which they are produced, propagated, and destroyed has been utilized in the prevention of disease by the adoption of measures for the comprehensive destruction of pathogenic microbes, and for the establishment of conditions under which their reproduction is limited or rendered impossible. The number of diseases which may be traced to the action of specific bacilli and which may be classed with those that are preventable is constantly augmented; and the study of preventive medicine has become of paramount interest to both surgeons and physicians, though it certainly has not been conducive to their pecuniary profit.

The practical work suggested by the conclusions reached in the laboratory has been so intelligently and efficiently directed in this city and elsewhere as not only to justify its theoretic basis and satisfy the medical profession, but even to convince the general public of its beneficence, notwithstanding the enormous expense which it has entailed and the apparent invasion of personal rights which is sometimes necessary. Specific instances of the eradication or limitation of disease by the Health Department of this city may readily be cited. Epidemic dysentery is now unknown. Variola has practically ceased to exist, and systematic compulsory vaccination by the agents of the Health Department has at the same time almost destroyed a source of once considerable revenue to the general practitioner. Typhus fever occurs only sporadically, and then is directly imported. Typhoid fever has become comparatively infrequent. The enforcement of a reasonable standard of purity of the milk-supply and of sanitary regulations in regard to plumbing has greatly diminished the number of gastro-intestinal disorders, as has better

hygiene of schools and tenement-houses those of the respiratory tract. The isolation of all cases of measles, scarlet fever, and diphtheria, and the subsequent employment of thorough disinfective measures has minimized the danger of contagion, and correspondingly reduced the frequency of their occurrence. Epidemic influenza, malarial fevers, and rheumatism, unhindered by official sanitary restrictions, pay undiminished toll to our profession.

It would be a grave injustice not to acknowledge the essential aid rendered to the sanitary authorities by physicians in private practice, who have not only made possible the enforcement of sanitary regulations which otherwise would have been impracticable, but have striven as assiduously for the prevention as for the cure of disease. Aside from the decrease in the number of cases of illness, some diminution in the physician's work may be fairly attributed to the employment of better methods of treatment by which the duration and severity of many diseases has been sensibly lessened.

The improvement in the health of the community which has resulted from a better knowledge of the proximate causes of disease, and from more efficient employment of preventive measures has been so gradual that its realization, as a fact related to a decrease in the aggregate of medical fees, is even yet imperfect. General forces which are gradual in their operation are not always immediately connected with their effects, and, as in this instance, may fail to be properly recognized if more direct and tangible causes are apparent.

The decrease of sickness may be estimated to some extent from mortuary records. From a table prepared through the kindness of Dr. Roger S. Tracy, Registrar of Records, it will be seen that the number of deaths occurring during the first eight months of the current year in this city from certain diseases selected as illustrative, and in total, is notably smaller than during the same period in 1895 or 1896. The comparison is necessarily confined to fatal cases; but as these have been found to hold a fixed relation to the whole number of cases in which illness is sufficiently severe to confine the patient to bed, it is all that is required for the purpose:

Total deaths, and deaths from certain causes during eight corresponding months of these different years are as follows:

Causes of Death.	1895.	1896.	1897.
Diphtheria.....	1194	1132	1034
Pneumonia.....	4094	4075	3200
Typhoid Fever.....	155	150	155
Malarial Fever.....	49	68	80
Phthisis.....	3523	3481	3243
Scarlet Fever.....	397	311	350
Diarrheal Diseases.....	2464	2380	1917
Respiratory Diseases.....	6019	5607	4542
Total Deaths from all causes.....	30,699	30,307	26,866

It will be observed that, while the total number of deaths was very nearly the same during corresponding months of 1895 and 1896, it was much less during the same period in 1897. This statement is independent of

the increase in population which makes the actual reduction in the death-rate appreciatively greater.

The ratio of trivial to serious illness cannot be statistically explained, but every physician knows that the balance is greatly in favor of trivial illness. It is similarly known that the lessened demand for the services of the physician in these minor ailments in which the patient may or may not be confined to the house, but not to the bed, is even more noticeable than the decrease in the number of more serious or fatal cases. The individual experience of the physician is corroborated by that of the pharmacist whose business reflects that of the physician, and indicates by its decrease that patients whether gravely or slightly ill have grown fewer.

Another reason for the leanness of the doctor's exchequer during the past year or two may be found in the general business depression, and in the resulting attenuation of the incomes of all sorts and conditions of men. This has necessitated the exercise of economy at the extremes of society, and, in fact, in every station of life. Medical services, long recognized by the practitioner as quite unnecessary, except as they allay apprehension or relieve *ennui*, have come to be more nearly appreciated at their exact value. The physician has been conscientious, as he has given the attention which has been demanded; now, it happens that when it is suggested that a daily visit is unnecessary, he is oftener taken at his word; or the person with some trivial ailment waits until the necessity is apparent before summoning the doctor or calling at his office. The little soreness of the throat, the slight cold in the head, the muscular pains here and there, the patient's suspicion of "malaria" or his certainty of "wind colic" no longer bring a consultation to the doctor and a prescription to the chemist as often as they did in a time gone by.

In the opinion of leading pharmacists, the growing habit among physicians of directing the use of the various tablets, triturates, and ready made medicinal combinations in place of complicated prescriptions to meet the therapeutic indications has much favored the tendency toward direct traffic between patient and apothecary. If the patient is of that class whose income affords no margin for luxuries and scarcely any for extraordinary expenses, he waits in the face of impending illness so long as he may, and when compelled to seek relief turns to charity, though unwilling, perhaps humiliated, and always suspicious of that which has cost him nothing, his poverty but not his will consenting.

The want of a proper adjustment of medical fees to the circumstances of the patient has undoubtedly injured to pecuniary disadvantage of the physician. The cost of medical services to people of affluence is not usually excessive, but to those depending upon a small annual stipend, and to those who, poorer still, are yet desirous of private medical attendance, it is, though perhaps not beyond the desert of the professional man, at least often disproportionate to the ability of the patient to pay. Many are driven against inclination to hospitals, clinics, and dispensaries who, to the extent of their means, would prefer to pay for medical services, but who are utterly unable to

meet the demands of the physician in whom they have confidence. It is not altogether the fault of the medical man, who is often enough ready to conform his fee to the ability of the patient to pay; but in this country we are so heavily taxed for conscientious work—the honest worker makes us pay so tremendously for his honesty—and that which is a little cheaper than the best is so atrociously bad, that unless the doctor is expensive he is naturally mistrusted. If, however, his casual connection with a college, hospital clinic, or whatever else it may be has inspired some family of modest means with confidence in a young physician, and who occasionally may be suspected of being modest in his charges, he is only too often impelled to make his fee quite as large as would the most eminent of his *confrères*, lest his professional position should be underrated; and if the eminent person himself should be consulted, of course he has his acknowledged position to maintain. The man whose income is not more than \$100 or \$150 per month, and whose absolutely necessary expenses leave little margin for accidents, may, without distress, meet the cost of casual and transient illness in his family, but is soon made bankrupt if it be more frequent or prolonged, though the physician exact no more than the minimum of established rates of compensation. The expense of even modest living has become so inordinate that the number of individuals of this class who are unable to make provision for emergencies has greatly increased; they may pay physicians' bills which, in the aggregate, and without reference to the amount of service rendered, are small, but must default in the payment of those which are larger, or must resort to the aid of medical charities. This, which is a proper use of medical charities, is a specific instance in which pecuniary loss has been suffered by the medical profession from the operation of a general cause—the resort to public sources of medical relief by a large class of people not absolutely poor who, under more favorable conditions of general business and of living, have heretofore been able to more or less generously contribute to the income of the private physician.

The abuse of medical charity, on the other hand, is independent of such general conditions as have been considered. The fact that funds designed by both public and private munificence for the relief of the sick poor have been diverted to the benefit of those who are beyond the necessity of charitable assistance, seems to be well established; and is generally believed by medical men to be largely responsible for a decrease in the business of the general practitioner. It is difficult to give this opinion statistical confirmation. The number of people treated in hospitals and dispensaries is certainly enormous, apparently constituting an undue percentage of the entire population, but the want of uniformity in manner of constructing reports in different institutions makes it impossible to know how far the figures given represent original patients. It is scarcely conceivable, for instance, that the 837,971 persons treated in the dispensaries of New York City, as reported for the year 1895, more than half the population at that time, were so many different individuals. It would, of course, be impossible to form

a numeric estimate for the proportionate number of those who are the recipients of medical charity who should be debarred by their ability to pay for what they receive. There can be no doubt that the evil is great; the result of concurrent individual observation is competent evidence, and making due allowance for a natural tendency to accept the most direct or apparent as the most effective cause of obvious phenomena, it must account for an appreciable part of the sum which has been subtracted from the aggregate medical income. The numerous and well-authenticated instances cited as occurring within the personal knowledge of physicians—of persons living in luxurious apartments or otherwise known to possess abundant means, the more than decent apparel of many other patients at the same institutions, the growing habit of physicians from the country in bringing the better class of their patients to city or private charities for consultation—indicating not only pecuniary loss to the medical profession, but still more lamentable loss of self-respect in the general community. The other and extreme instances in which dispensary patients are said to leave their carriages and servants around the nearby corner of a street, or in which a woman possessed of fortune beyond that of any other of her sex is said to have accepted medical charity not only at a dispensary but in the private office of its medical attendant, if true, as claimed, must be too exceptional to have more than a curious interest.

An unquestionable and flagrant abuse, not of charity, but in its guise, exists in the exaction of small fees from patients in clinics and dispensaries. That such institutions of a semipublic and professedly charitable character, with all the advantages of endowment, prestige, and organization, should enter into a competition with individual physicians in order that their already provided-for expenses may be reduced or their facilities for teaching may be increased, is a monstrous injustice. It is a direct and naked application to the practice of medicine of the principle upon which mercantile trusts are founded. An institution which claims exemption from taxation, or from damages in a suit for malpractice, on the ground that it is a charitable institution, certainly has no business to give medical treatment at cut rates to all comers, while it sends penniless but surgically uninteresting patients to Bellevue to be cared for at the public cost. A lying-in infirmary, founded by private beneficence for legitimate purposes of teaching, transcends its functions when it competes with the family physician for cases at his own rates, or a little less. These and similar encroachments upon private practice, stated and believed by reputable members of the profession to be well established, even though defensible, could not fail to diminish its aggregate emolument.

There is danger lest the proper uses and abuses of charity should be confounded. The hospital or dispensary patient who is comfortably clad, who evidently is of a better class than the majority, or the woman with perhaps a superfluous ribbon or some little personal adornment, the cost of which might possibly have paid a doctor's fee, is not necessarily a trespasser upon the benevolence of the public, or to be directed to the private office of its representative. The clerk or small shopkeeper, or other per-

son, who with his family has some refinement of feeling if not absolutely cultivated, and accustomed to decent surroundings, ought not to be herded with laborers in a squalid tenement that he may put by money for the expenses of some possible illness. He is entitled to have a proper regard for the comfort of his family, and even for appearances; and if his meager income reaches no farther, or will not compass what he rightly or wrongly believes to be adequate medical attendance, he may claim with right when sickness comes, such aid as public institutions can give, and should not be stigmatized as a pauper or as a dishonest claimant of the public bounty. The sharpest pangs of poverty are not felt by the poorest, and no lives are more pathetic than those which border upon penury, though they never surpass its limit.

The most effective of the causes further contributive to a decline in the business of the general practitioner are in part an outgrowth of the business methods which prevail at the present time, and in part due to what may be termed the complicated mechanism now employed in the treatment of disease. The growth of specialism, the multiplications of sanatoria, and the disposition of patients suffering either from acute illness of severity or from surgical disorders to enter public or private hospitals which have together made serious inroads upon general practice, have each this two-fold origin. There are mining, bridge, and electric engineers; real-estate, criminal, and patent lawyers; grocers who sell only tea, or perhaps butter and eggs; and butchers who are dangerous only to pigs or chickens, as the case may be. So too, there are trusts and monopolies which destroy the smaller traders. The subdivision of business and the limitation of the field of individual enterprise grows more and more complete from year to year, and he whom circumstance compels to row against the tide, if he survive, must drop behind. In the medical profession, specialties and specialists increase and the temper of the public mind improves, until little or nothing is left to general practice—even rheumatism, dyspepsia, appendicitis, and gonorrhea have been pre-empted. The country doctor who is at once physician, surgeon, gynecologist, and all sorts of specialists combined, still survives to some extent, and is likely to be a man of broader mind than his *confrère* who is potent only in some high degree of trituration. The analogue of commercial trusts and combinations exists in the foundation of medical schools, clinics, dispensaries, and minor hospitals. Medical faculties and medical boards have not failed to recognize the value of mutual aid and cooperation in the advancement not only of their semipublic but of their private interests. The number of these institutions, which is already in excess of public requirement, grows constantly larger, as men who are excluded and are emulous of their advantages form new combinations and establish for themselves new institutions. These references to present peculiarities and conditions of medical practice are not intended as a criticism, an expression either of approval or of condemnation, but simply in explanation, to a certain extent, of another fact *sub judice*. The introduction of appliances too complicated or too expensive, or requiring too much technic skill in their employment for the casual occasions

of general practice, has much enlarged the field of special treatment and correspondingly restricted the work of the general practitioner. In like manner, the recognized necessity for the maintenance of surgical asepsis, and the perfection of detail, the proper environment, the employment of specially trained surgical nurses and assistants which it involves, have compelled the surgeon to very generally remove operative cases to the hospital, and thus deprive the attendant physician of the after care of his own patients. The increasing number of sanatoriums established for the reception of cases of chronic disease, especially of phthisis and of the neuroses, in accordance with the present views of treatment, must, in an appreciable degree, detract from the income of the general practitioner to which such chronic cases largely contribute.

It has been thought that the profession suffers from an over-congestion of its ranks, and this, with the undue extension of the work of medical charities has been generally regarded as the essential, if not the complete, explanation of the present unsatisfactory pecuniary returns made to so many of its members. It is probably true that the number of medical men has increased out of proportion to the population. The medical profession has been made more attractive, its dignity has been greatly enhanced, its highest rewards have become as brilliant as those in any of the learned professions; and educated youth has naturally entered more freely upon its study. The half-educated and uncultivated more than ever swell the enormous classes of medical schools; the natural restlessness of the masses of people in a country in which no class distinctions exist, except such as come from the possession of wealth, constantly forces into the struggle for better place those who are entirely unfitted by education and social surroundings for the position to which they aspire, and perhaps attain. This plethora of recruits is equally notable in other professions, especially in the larger cities, and is more marked in this country than abroad where the maxim, *Sutor ne ultra crepidam*, is more carefully observed. The several hundred applications for a naval chaplaincy, though clergymen no more than cats are fond of the sea, is evidence of a redundancy of clerical endeavor; and the New York City directory is eloquent of the amount of legal talent at the disposition of the public. It is questionable, however, how far this accession to the membership of a profession, even if apparently over-large, is really a menace to its general prosperity. If any harm has been done to the medical profession it has been rather to the surgeons than to the general practitioner, whose case it is that has elicited sympathy and discussion. The surgeons of ability and skill, so few even in still recent years, have been disproportionately reinforced in numbers, and the changes in surgical methods have been such that the younger men have been enabled almost at once to meet their elders on nearly equal terms. If competition has become more intense in the medical profession, it is a result of a higher and more complex civilization, a greater density of population, and a consequent harder struggle for individual existence. The rivalry of charlatans and heterodox practitioners continues, as it probably always

will, but there is no apparent reason to suppose that it is more active or more successful than in the past.

Many of the causes which have been enumerated as showing the responsibility for a decline in the remunerative business of the physicians have been operative for a considerable time. The fact itself has been patent for scarcely more than a year, or at least, it has not been so notable as to provoke general discussion. Changes in social conditions are always insidious, usually unnoted until long after they are evident, and in time, often seemingly explosive. History teems with examples. In this instance, effects which have been thought to be individual experiences of only passing import were somewhat suddenly discovered to be general and possibly permanent.

In view of all these causes of decline it may be said that the only wonder is that the general practitioner has any practice left at all; but the world is large though the doctors may be many, sickness and death are the heritage of all mankind, and, as a matter of fact, we have not yet found our occupation gone.

The natural and fitting termination of a discussion which involves the etiology of grievances is in the indication of means for their removal; but it is easier to observe phenomena, to speculate upon their origin and to moralize, than to suggest a remedy—as we too often find in the study of our cases. The improvement in the health of the community is likely to be progressive, through the efforts of the profession which has already begun to feel the pressure of the crown of martyrdom. The general commercial depression and the consequent contraction of incomes which has led to an economy in medical attendance among people of moderate means, and even of moderate wealth, and has driven the poor to hospitals and dispensaries, is of course beyond our influence or control.

The injury which has been done to private physicians by the unwarranted methods of pseudo-medical charity is unquestionably capable of whatever relief the law can afford. It is only a minority of charitable institutions, and out of the whole number in this city—exceeding one hundred—not more than four or five have opposed necessary legislative and executive action. Such legal restrictions and supervisory provisions as are practical have only to be framed with sufficient care and judgment, and when proposed for enactment to be supported with energy and unanimity, to make it quite possible to overcome any selfish opposition which can be made. Remedial legislation, however, can never entirely obviate existing causes of complaint, except by a censorship so severe and a surveillance so complete as to be alike distasteful and foreign to the characters of members of an honorable profession. If the managers of hospitals, dispensaries, and college clinics remain regardless of their professional obligations to their fellows, and in their eager desire to purvey "material" for the instruction of students, or for their own exploitation, and welcome patients who, by reason of sufficient means, have no right to be accorded the privilege of the poor, no process of law can wholly restrain them. There are moral delinquencies, as there are crimes, for which no legal punishment is provided. It is a sophism to say that the public exposure to which the patient is

subjected is in the nature of a remuneration, or that a medical institution has the right to proffer, or the patient to accept, a charity which is not justified by even the semblance of poverty. No body of men has the right to debauch public sentiment or to impair the self-respect of a considerable class and to pauperize those who are capable of self-support—to stimulate the growth of the very evils which sociologists and philanthropists are struggling to limit by the discouragement of undeserved and indiscriminate charity. It is an injustice to society as well as to the medical profession for which the profession itself is in great part responsible. Its tolerance of methods which are too nearly akin to those of purely commercial pursuits and of a loosening of the bonds of professional obligation which bind physicians one to another in honor and fraternity, has made possible the very scandal which is now the subject of discussion and complaint. It is in a return to a higher conception of professional morals, and to its enforcement upon the few by an aggressive professional sentiment that the most complete protection to the many will be found. The constant inculcation of the fraternal duty which medical men owe to one another as the panacea for all the professional ills from which they suffer may grow wearisome, but in rehearsing the errors and grievances of a profession in which the general welfare is so peculiarly dependent upon the observance of the golden rule it is difficult to avoid usurping the ministerial office.

The undue or inconvenient increase in the number of practitioners of medicine, whether or not it is to be deemed an evil, is no more to be controlled than the growing disposition of people of moderate means to seek unnecessary medical advice. The profession cannot be surrounded by a Chinese wall; so long as it seems to offer desirable rewards new men will enter at will, within the limits of such restrictions as may legally be prescribed—and if we are jostled or too much crowded we must endure with the best grace we may. The longer course of study which is now necessary is certainly far from prohibitive, and more exigent demands upon the time and scholarship of the student, if made hereafter, while elevating the character of the profession will hardly decrease the number of its votaries. Competition grows more intense, whether the most urgent cause may be the diminished work to be done, or the greater number who stand ready to do it; learning, sagacity, assiduity, and tact—every honorable means is essential to honorable success. Let us be desirous of none other—let us avoid questionable methods; and if our tools must be sharp Heaven grant that they may always be clean. And you who find the struggle hard, who have learned that the realization of a high conception of professional honor oftener leads to business failure than to success, or may sometimes be inclined to falter or to grow faint at heart, take to yourself the adjuration of that fine gentleman himself, who never faltered and whose heart was always brave—William Makepeace Thackeray:

"Who misses or who wins the prize,
Go lose or conquer as you can;
But if you fail or if you rise,
Be each, pray God, a gentleman."

THERAPEUTIC NOTES.

Treatment of Ocular Neuralgia.—MARKOFF (*La Méd. Mod.*, August 21, 1897) advocates the use of cyanid of potassium and quinin in the treatment of neuralgia. Morphine, whether given internally or by hypodermic injection, has very little if any effect. Cocain has only a temporary action, and produces an artificial paralysis of the terminations of the nerves which is looked upon as the cause of a neuroparalytic affection of the cornea. Cyanid of potassium is administered in a warm solution of a strength 1:300 or 1:200 of which five to ten drops are instilled into each eye held widely open. This solution will keep well in a dark bottle in a cold place; but if it has lost its characteristic odor, its virtue has disappeared. The chlorhydrate of quinin is employed in a one-per-cent. solution which *must not contain any acid*. The following is an excellent prescription:

R	Quinin chlorhydrate	.	.	.	gr. i
	Morphin chlorhydrate	.	.	.	gr. ss
	Water	.	.	.	m. c.

M. Sig. Instil 5 to 10 drops into the eye. Repeat in fifteen minutes if necessary.

It is very seldom that a second application is required. The fundamental trouble will, of course, remain, but the neuralgia will disappear at once.

New Method of Removing Polypoid Growths of the Bladder.—In the *Jour. of Cutaneous and Genito-Urinary Diseases*, July, 1897, CHISMORE describes a method of locating and removing polypoid growths of the bladder by means of the suction exerted by an aspirator attached to a litholopaxy catheter, or other suitable tube. Through the medium of this suction the polypi are caught in the eye of the instrument, and by gentle traction and slight to-and-fro sawing movements are separated and drop into the reservoir of the wash-bottle. Two or three ounces of a hot boric-acid solution containing, if need be, a little cocain, is injected into the bladder and the point of the catheter is systematically passed over the wall of the viscus.

To the natural objection to this procedure,—that portions of the normal bladder-wall may be caught and torn off or injured,—Chismore claims, that the touch, if acute, will readily determine the difference in sensation, as the wall of the bladder occludes completely, and with a little thud, the eye of the instrument, while a polypus, being smaller and softer, is able to float a little way into the instrument and even then may only partially obstruct its lumen.

Airol in Diarrhea.—VENUTIS and BARBAGALLO (*Therapeut. Wochenschr.*, July 25, 1897) have used with success, in cases of acute and chronic diarrhea, airol in doses of from 2 to 5 grains. The remedy proved absolutely harmless, and especially in acute cases its action was prompt and reliable, so that it was not necessary to alter the usual diet. It was also found to be of service in some cases of tuberculous diarrhea, although larger doses were required.

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OF MEDICAL SCIENCE.

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SATURDAY, OCTOBER 23, 1897.

CAUSES OF THE DECLINE IN PHYSICIANS' INCOMES.

THE shrinkage in the aggregate income of medical men during the last few years is a painful fact to which all members of the profession yield a reluctant but positive acknowledgment. Among many, more especially the young and recent recruits to the ranks of the profession, the scant remuneration has been the cause of bitter complaints, and the struggle for existence has proved painful and disheartening. Under such circumstances it is not easy to be philosophic; hope gradually fades into despair; the one most apparent source of the difficulty is hit upon as the effective cause of all visible wrongs, and the sufferer is in danger of wearing himself out in his efforts to right the one, only to find that the dragon's tooth has brought forth a greater crop of evils than is in his power to correct.

To take a broad and philosophic view of the situation, classify the various causal factors of the existing condition, and present them in proper proportion and relation, requires the mind of a master. This was most satisfactorily accomplished by Dr. Charles Phelps in his address at the recent meeting

of the New York State Medical Association in this city. The address is published in full in this issue of THE MEDICAL NEWS, and cannot fail to prove most interesting and instructive reading. Some of the causes of a depression in medical finances are recognized as permanent and unalterable, others are susceptible of immediate correction, and still others will correct themselves with the improvement in general commercial conditions. One of the facts which must be considered a permanent factor is the comparative infrequency of many once common diseases, the result of improvements in sanitation and hygiene. It is demonstrable that the total amount of sickness in the community has been very considerably decreased by the application to practical sanitation of the results obtained in the study of pathology and prophylaxis. It is the glory of the medical profession, however, that it can sink its own pecuniary interest in the eager pursuit and practical application of preventive medicine.

While we have not yet reached that millennial condition in which good health is contagious, we are rapidly arriving at the coveted stage of development at which health and physical endurance are becoming fashionable. The "interesting" invalid is no longer interesting. On the contrary, the young maid or woman who can lead at golf and ride the wheel without undue fatigue is the heroine of the hour. The fashionable physician who made his daily rounds to administer to fancied ills, meeting the demands of the case by satisfying the fancy, and calling again on the morrow at the insistence of the patient to pronounce upon the improvement, is finding his occupation gone.

The manifold ways in which the recent financial depression has had the effect of reducing the emoluments which have hitherto unceasingly flowed into the medical man's exchequer, are presented with most discriminating accuracy.

The abuse of medical charity in hospital and dispensary is arraigned as a most potent factor in the gradually diminishing income of the physicians of large cities. For this evil a prompt remedy exists in appropriate legislation, but the full corrective influence of legislative enactment may only be obtained by recalling the members of the profession to an appreciation of the professional obligations which bind physicians to one another in honor and frater-

nity, and to loftier conceptions of professional morals. In treating this part of the subject the address of Dr. Phelps has the ring of old-time professional dignity and self-respect. It is especially appropriate at this time and cannot be too constantly reiterated.

THE ABUSE OF MEDICAL CHARITY.

THE first gun of the autumn campaign against hospital and dispensary abuse was fired by Dr. Wiggin at the recent meeting of the New York State Medical Association held in this city. This subject has been seriously agitated for more than a year. Sufficient time has been allowed for a thorough examination of all the facts in the case, and the evidence is now in. Dr. Wiggin very wisely collected not only the facts which have been made manifest by recent investigations and in official reports, but also presented in a striking and graphic manner the opinions which are held in reference to this subject by authoritative writers in widely separated communities. It is apparent that not only is a gigantic imposition practised upon nearly all charitable institutions, but is carried to such an extent as to threaten a serious moral deterioration of a large number of people in the communities in which these institutions exist.

With this debauching of public conscience there also is inextricably associated an injustice and injury to the profession in depriving it of fair and honorable emoluments. In the righting of the first there will also be accomplished the restoration of the individual physician to his proper sphere of professional activity, with accompanying and adequate remuneration.

In the endeavor to correct these abuses, the medical profession deserves the willing assistance of all who have the good of the community at heart. In thus insisting upon a cessation of the baneful influences of indiscriminate charity, we will not diminish one iota the justice of the claim which the medical profession makes in its own behalf. The righteousness of the demand is recognized by those who personally do not feel the ill-effects of the abuse, and, as Dr. Phelps has said, the cordial cooperation of such men with those less favorably placed, in an endeavor to correct the abuse, is corroborative evidence that it exists and is recognized by all.

The only method of eradicating the evil is by means of legislative enactment. To carry an efficient bill through the legislative and administrative ma-

chinery, requires a united activity on the part of the entire profession. The existing condition has been of insidious growth, and is not the result of action by any coterie of men with designs upon the rest of the profession, but is the legitimate outcome of sharp and eager competition, the far-reaching results of which could not be anticipated, and became manifest only when acting in conjunction with the many other causes which have diminished the physician's income. The general financial distress of the last few years has made them strikingly evident.

Let us not deplete our ranks, nor alienate any of our brethren by throwing mud or applying undignified epithets to those who apparently are within the enemy's lines. Nothing is gained by the pot calling the kettle black. Let us recognize the fact that the fierce struggle for precedence in a hotly contested competition has created a condition which we seek to remedy, and when an efficient law has been enacted, no effort to resist its universal application need be feared. Let us not divide our strength into factions, each of which will take an extreme view, and whose motto will be, war to the knife and no compromise. The condition which exists is a silent outgrowth of conditions and circumstances for which the entire profession is to some extent responsible. Extremists on both sides are invariably wrong; the right way lies between. The need of settling this question is desperate and with united forces there is every probability that it will be speedily and rightly terminated.

ECHOES AND NEWS.

Death of Professor Stoeber.—The news comes from St. Petersburg that Dr. Stoeber was frozen to death during an ascent of Mount Ararat, in company with other members of the recent Geological Congress.

The Sanitary Institute of Great Britain.—This society recently celebrated its twenty-first anniversary by a dinner in London. The institute now has 2000 members and associates, and its annual income amounts to \$30,000.

Death of Dr. Luke Robinson.—Dr. Luke Robinson of San Francisco, one of the most prominent physicians in California, died suddenly last week of heart disease while on a Southern Pacific train in the San Joaquin Valley.

Typhus on the Pacific Coast.—According to Dr. Williamson, of the San Francisco Board of Health, the first case of real typhus fever ever recorded on the Pacific Coast

has recently been discovered at St. Luke's Hospital in that city.

Compulsory Insurance against Sickness.—The National Council of Switzerland recently adopted a bill which introduces a system of compulsory insurance against sickness by all persons not possessed of means sufficient to make their positions independent.

An International Leprosy Society.—The news comes from Berlin that the leprosy conference has appointed a commission of twenty, including Professor Virchow as president and Dr. Dyer of New Orleans, to prepare the way for an international leprosy society.

A Hospital Suicide.—A patient under treatment at the Long Island College Hospital, Brooklyn, N. Y., jumped from a second-story window last week. His skull was fractured, several ribs were broken, and he was so badly injured internally that he will die.

Death of Professor Heidenhain.—Professor Rudolphe Pierre Henri Heidenhain, incumbent of the Chair of Physiology at the University of Breslau, is dead. He was born at Marienwerder in 1834, and studied medicine and natural science at the universities of Koenigsberg, Halle, and Berlin, and experimental physiology under the direction of Professor Du Bois-Raymond.

Ambulance Classes for Sailors.—In England "ambulance classes" have been formed in which sailors are taught some of the simpler methods of treating accidents, and silver badges are given to those who pass the examinations. This has become necessary from the fact that the law requires only such vessels as carry more than a hundred persons to employ a medical officer.

X-Ray Photograph Not Admitted as Evidence.—Judge Henry M. Nevius of the Hudson County Circuit Court in Jersey City recently refused to admit as evidence in a suit for damages an X-ray photograph showing the nature of the injury received. His refusal was based upon the fact that the X-ray photograph has never been used as evidence in that State, and he did not desire to establish a precedent.

The Bicycle and Phthisis.—Last year, for the first time in the history of the State of Massachusetts, the number of deaths from phthisis in females was smaller than that in males. For five years the female death-rate from this cause has been steadily decreasing, and, as women have been riding the bicycle for about that length of time, the decrease is ascribed to the open-air exercise inaugurated by the use of the wheel.

Ship-Surgeons on Inland Steamers.—The Newport (R. I.) Medical Society is agitating the question of compelling Sound steamers and those which ply along the coast and on the great lakes, to carry ship-surgeons. The Sound steamers often carry as many as a thousand passengers, medical attendance is frequently required and is generally furnished, much to his discomfort and annoyance, by some medical man who happens to be a passenger.

The law on the subject is very lax, and steps are to be taken to induce Congress to make a change for the better.

Sanatorium for Incurables.—Buildings are being erected in Forestburg, N. Y., by the Sisters of St. Dominick, to be used as a sanatorium during the Summer season for patients from St. Catherine's Hospital, Williamsburg, L. I., and as a permanent home for incurables. The site is 1947 feet above the sea level. Patients in the first and second stages of phthisis will be received in order that they may have the benefit of the high altitude. The estate covers an area of 1173 acres, and the various buildings are separated from each other by a distance of from 1000 to 3000 feet. The architecture is of Medieval monastic style, and the buildings will be provided with all modern improvements, heated by steam, and lighted by electricity. When completed, the establishment will be the largest of its kind in the United States.

Yellow-Fever Notes.—Three deaths from yellow fever occurred on the British steamer "Honiton," during her voyage from Progresso, Mexico, to Boston, Mass. She is now in quarantine at the latter city, and the health officers have begun the work of disinfection.

The tramp steamer "Sonnehille" arrived at Baltimore last week with a case of yellow fever on board, and several of the crew not feeling well. She has been fumigated and is held in quarantine.

The news comes from Plymouth, England, that the British steamer "Medway" has arrived from Colon, via Barbadoes, and reports two deaths from yellow fever during the voyage. No other cases have developed.

A New York physician, practising at Grand Caymans, Jamaica, reports that an epidemic of what appears to be malignant typhoid fever is prevailing in Jamaica. It is not admitted that the disease is yellow fever.

Tobacco-Smoking and Genius.—In his work, *Introduction à la Médecine de l'Esprit*, M. Maurice de Fleury devotes a chapter to tobacco-smoking from the point of view of men of letters. The following are the opinions in epitome of three among the most eminent writers of the century. In the first place, Balzac: "The architect of that cyclopean monument which bears the name *La Comédie Humaine* professed a fanatical aversion to tobacco in all its forms, and was constantly employed in an endeavor to purge the *Régie*." In his books he invariably covers with contempt the characters whom he portrays as smokers, and an entire chapter in his "Treatise on Modern Stimulants" consists exclusively of fulminations against the weed and its worshippers. His, in fine, is the motto under which the devoted members of the *Société contre l'Abus du Tabac* wage an unceasing war. "Tobacco destroys the body, attacks the intellect, and besots the nations." Next, Victor Hugo, the author of *Les Misérables*, was likewise no smoker. As Théodore de Banville once said, "In the house of Victor Hugo, Peer of France, no one has ever even attempted to smoke." In this connection an anecdote suggests itself. One evening in the master's home one of the guests, Villiers de l'Isle-Adam, I think, was vaunting the beneficent effects

of a cigarette on a creative imagination. The great poet at once rose in revolt. "Believe me," he said, "tobacco is more hurtful to you than beneficial; *it changes thought into reverie.*" Finally, M. Émile Zola says: "I have no definite opinion on the question. Personally, I gave up smoking ten or twelve years ago on the advice of my medical attendant at a time when I believed myself to be affected with heart disease. But to suppose that tobacco exercises an influence on French literature raises a question of such magnitude that the most rigid scientific proof alone could dispose of it. I have known great writers who smoked without stint, but their intellects were not one whit less acute. If genius be a neurosis, then why seek to cure it? Perfection is such a very tiresome thing that I very often regret having broken myself of the tobacco habit. And as I know nothing more about the question I do not dare to enlarge upon it."—*The Lancet.*

Health Reports.—The following statistics concerning smallpox, yellow fever, cholera, and plague have been received in the office of the Supervising Surgeon-General of the United States Marine Hospital Service, during the week ending October 16, 1897:

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Bayminette, Ala.	October 14.	1	1
Flomaton, "	October 14.	4	..
Wagar, "	October 11.	1	..
Mobile, "	October 1-15.	77	9
Atlanta, Ga.	October 8.	1	..
New Orleans, La.	October 1-15.	556	56
Franklin, "	October 14.	1	1
Biloxi, Miss.	October 1-15.	208	7
Clinton, "	October 9-14.	2	1
Edwards, "	October 1-15.	179	16
McHenry, "	October 1-15.	20	1
Nitta Yuma, "	October 11-12.	..	1
Pascagoula, "	October 14.	2	..
Scranton, "	October 1-15.	122	4
Galveston, Tex.	October 9-12.	12	..
Houston, "	October 11.	3	..

YELLOW FEVER—FOREIGN.

Para, Brazil.	September 18-25.	..	5
Rio de Janeiro, "	August 28-September 11.	1	1
Cardenas, Cuba.	September 25-October 2.	..	1
Cienfuegos, "	September 26-October 3.	..	2
Sagua la Grande, "	September 18-October 2.	75	6
Kingston, Jamaica.	September 18-25.	4	2
Vera Cruz, Mexico.	October 1-7.	3	..
Panama, U. S. Col.	September 23-October 3.	1	1

CHOLERA—FOREIGN.

Bombay, India.	September 7-14.	..	41
Calcutta, "	August 28-September 4.	..	6
Madras, "	September 3-10.	..	8

PLAGUE—FOREIGN.

India, Bombay.	September 7-14.	..	27
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SMALLPOX—UNITED STATES.

Birmingham, Ala.	October 2-9.	4 (3 varil'd.)	
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SMALLPOX—FOREIGN.

Manaos, Brazil.	September 11-25.	65	7
Rio de Janeiro, "	August 28-September 11.	11	..
Hong Kong, China.	August 21-28.	..	1
Sagua la Grande, Cuba.	September 18-October 2.	40	2
Calcutta, India.	August 28-September 4.	..	1
Madrid, Spain.	September 14-28.	..	7
Moscow, Russia.	September 11-18.	1	..
Odessa, "	September 18-25.	1	..
St. Petersburg, "	September 11-25.	12	3

CORRESPONDENCE.

NEW DRESSING FOR WOUNDS.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: Equal quantities of paraffin and unpurified beeswax melted together make an admirable surgical dressing when it is desired to apply an air-, water-, and germ-proof covering. The mixture may be completed by placing it in a narrow-necked culture-bottle and sterilizing over a sand-bath. When required for use, the preparation may be liquefied by heat within a few minutes. After being spread over the wound, either directly or after absorbent cotton has been applied, it immediately hardens and becomes firmly adherent. The heat of the melted mixture acts as a hemostatic, and, according to my experience, this dressing hastens regeneration. It does not irritate the skin, and may be easily removed. It is inexpensive and easy of application, and will hold in suspension almost all known antiseptic powders. My method of applying it is by means of a swab composed of absorbent cotton wound on a stick or probe.

SAMUEL H. FRIEND, M.D.

MILWAUKEE, WIS., October 7, 1897.

OUR BERLIN LETTER.

[From our Special Correspondent.]

GERMAN MEDICAL CONGRESSES DURING SEPTEMBER—A SUGGESTION TO SUBSTITUTE RUSSIAN KVAS FOR GERMAN BEER—THE NEW GERMAN PATHOLOGICAL SOCIETY—SANATORIA FOR CONSUMPTIVES—JUDGMENT SUSPENDED AS TO THE NEW TUBERCULIN—THE PSYCHOLOGY OF A CHESS CONGRESS.

BERLIN, October 16, 1897.

THE latter part of September is a favorite time for the meetings of medical congresses in Germany, and no less than four have been held during the past three weeks. At this time summer vacations are usually over, and the regular work of the semester has not yet begun, so there is a favorable opportunity for the gathering of medical men under propitious circumstances. The meeting of the Society of German Alienists at Hanover, of the German Society for Public Hygiene at Karlsruhe in Baden, of the German Scientists and Physicians at Brunswick, and the annual meeting of German Physicians at Eisenach, the *Arzte-Tag* as it is called, have all been well attended.

The last-named society is intended more especially for the discussion of subjects bearing directly upon the physician himself and his relations with his colleagues. A series of resolutions were drawn up containing suggestions for the legal regulation of quackery, and they occasioned a good deal of discussion. All were agreed as to the eminent desirability of the object proposed, but as to the means that would best secure it, there were many differences of opinion. In general, the impression seemed to be that until there is a radical change in the relations between the government and the medical societies, so that the latter would be entrusted with the framing of legal regulations relating to the practice of medicine, very little could be hoped for from legislation. In the meantime there was complete unanimity of opinion with regard

to the necessity for action which is extremely encouraging, and is bound sooner or later to gain recognition. The public will finally be educated to understand that the regular profession seeks sincerely the public good in its effort to suppress quackery, and then more efficient legislation may be anticipated. The organization of effort in this direction will prevent the matter from being dropped until something effective has been accomplished.

At the same meeting the discussion of the hygiene of public schools drew forth some complimentary remarks as to the recent American innovations in the matter of medical inspection of schools which serve to show how soon a good thing is appreciated, even at a long distance.

At the meeting of the German Society for Public Hygiene one of the main subjects discussed was the use of alcohol and the question as to how its ever-increasing consumption may be restricted. Here in Germany statistics seem to show that cirrhosis of the liver is almost alarmingly on the increase, though only in a ratio proportionate to the amount of beer and other alcoholic beverages consumed. Dr. Karl Frankel suggested the Russian drink kvas as a substitute for beer, which so many of the members of the congress at Moscow, though tasting it for the first time, had found so pleasant and refreshing. During the hot days at Moscow nothing seemed more palatable than this simple fermented liquor, which is not unlike our own popular root beer. Kvas contains scarcely one-half per cent. of alcohol, and most Americans who attended the congress would agree with Dr. Frankel that it would form an excellent substitute for beer during the heated term when the temptation to consume a good deal of liquid is almost irresistible.

Though there might seem to be enough medical societies and congresses, the recent meeting of the German Scientists and Physicians at Brunswick witnessed the organization of another. This is to be known as the German Pathological Society, and it is to hold its meetings each year in the same place and just after the sessions of the former society at the close of which it was organized this year. If the names of its officers are any guarantee of the character of the work which will be presented at its meetings, the proceedings of the new society may be expected to attract a good deal of attention. Professor Virchow is the president of the new society, and Professor von Recklinghausen, its secretary.

Two new public health sanatoria for consumptives were opened during the past week, the one at Albertsberg, the first in Saxony, with a great deal of *éclat* in the presence of royalty. Plans for many others and for extensive additions to those already existing are under consideration.

The treatment of tuberculosis in sanatoria constitutes, in the opinion of the German medical profession, the best means of combatting the disease. Professor Leyden's discourse at one of the general sessions of the congress at Moscow gave expression at once to this feeling, now so common, and to the reasons underlying it. There is no specific therapy for this dread disease despite all the claims which have been made, and the only thing left is to strengthen the vital resistance of the individual and so enable him to fight his own battle. For this, the regular

life, the constant watchful medical care, the plenteous nutritious diet, and, above all, the avoidance of every excess, all of which are so easy of attainment in a sanatorium, constitutes the best therapy yet found for consumption. Statistics in ever increasing number serve to show that such sanatoria are really working wonders. Most of the objections urged against them—the liability of contagion, dissatisfaction on the part of patients, and impatience of restraint—have disappeared before the actual experience of their good results. Government itself is now beginning to take an interest in the question of sanatoria for the consumptive poor, and wealthy philanthropists are coming to the realization that their establishment is calculated to be a matter of the greatest practical benevolence and charity.

As to Koch's new tuberculin, the editors of the *Deutsche Medicinische Wochenschrift* after having devoted considerable space to papers upon the subject have now resolved to close their columns for a time to its further consideration. It will take years to really decide the therapeutic value of the new serum, and discussion at present can only be illusory, the personal feelings of the observer too greatly influencing his judgment as to results. The use of the old tuberculin for diagnostic purposes seems to be thoroughly disapproved of here in the clinics for internal medicine. The reaction which occurs after the injection of tuberculin when tubercle bacilli are present is considered to be due to a necrosis of tissue around the bacilli and the absorption of toxic products therefrom. Such a septic reaction cannot be without danger, and necrosis of tissue may cause the further absorption of bacilli into the lymph- or blood-vessels and so institute an acute process. As the majority of people have encapsulated bacilli in the apices of the lung or somewhere in the bronchial glands without being in the slightest sense tuberculous, the occurrence of the reaction cannot be said to be definitely diagnostic of active tuberculosis. In cases where the bacilli have been completely shut off from the possibility of doing any harm by Nature's protective barriers of inflammatory lymph, there is danger that the quiescent condition may become active under the influence of the injected toxins. The injections are practically considered unjustifiable, except in the determination of the etiology of such serious affections as pleurisy or ascites where the patient's dangerous condition makes an experimental diagnosis with tuberculin less risky.

The International Chess Congress has been in session in Berlin for about two weeks, and the presence of the great masters of the game has given the occasion for some medical remarks as to the physiologic psychology of that species of the *genus homo* that plays chess. Strangely enough, considering the high estimation in which great chess-players are usually held by their immediate friends, the medical opinion of them does not seem very exalted. There have been some very pointed remarks made as to the questionable utility, as a means of recreation, of a so-called game which requires a mental tension and attention which is fatiguing in the extreme, and which must call for a large waste of intellectual energy. That the training incident to this continuous

nervous strain is not beneficial as regards other and more useful mental occupations, the best proof seems to be the sterility of great chess-players in other intellectual work. The exercise saps energy rather than trains faculties, and what of training it gives is so specialized to the game itself that it is of no use in other and more useful lines of thought. As to the great players themselves, they are usually typical examples of a complete one-sided development. This development affects principally the memory, the lowest of the intellectual faculties, and more especially, the coordination and retention of visual impressions—the first of mental aptitudes acquired in the course of evolution. On the whole medical opinion does not seem to favor the game in these days of hyperneurotic conditions, unless it be occasionally for the over-occupied business man whose thoughts as to mercantile details do not give him real leisure, except when absorbed in something, which like this, requires complete and absolute attention.

OUR PHILADELPHIA LETTER

[From our Special Correspondent.]

TOPICS FOR DISCUSSION AT THE AMERICAN PUBLIC-HEALTH ASSOCIATION MEETING—DEDICATION OF THE D. HAYES AGNEW MEMORIAL PAVILION OF THE UNIVERSITY HOSPITAL—BERI-BERI IN PHILADELPHIA—COLLEGE OF PHYSICIANS OF PHILADELPHIA, SECTION ON GENERAL MEDICINE—DR. R. C. NORRIS' ILLNESS.

THE Executive Committee of the American Public-Health Association, which convenes here on October 26th, has announced the following topics for discussion:—The pollution of water supplies; the disposal of garbage and refuse; animal diseases and animal food; the nomenclature of diseases and forms of statistics; car sanitation; steamboat and steamship sanitation; international committee on the spread of yellow fever; the relation of forestry to public health; the cause and prevention of infectious diseases; public-health legislation; the cause and prevention of infant mortality; the transportation of diseased tissues by mail; the period during which each contagious disease is transmissible, and the length of time during which a patient having a contagious disease is dangerous to the community; sanitation with special reference to drainage, plumbing, and ventilation of public and private buildings; the consideration of some method of international arrangement for protection against the transmission of infectious diseases; disinfectants; and an examination into the existing sanitary municipal organizations of the countries belonging to the Association, with a view to a report upon the most successful in practical results. The above general topics are to be supplemented by special papers at the meeting, and of these communications a daily programme will be issued during the course of the convention. Not the least prominent features of the meeting will be the exhibit of various appliances pertaining to sanitary matters and allied subjects. In addition to the trade displays, of which there are to be a large number, interesting exhibits from the municipal health boards of New York, Philadelphia,

Cincinnati, Baltimore, and other large cities will be held, comprising a practical demonstration of the application of city bacteriologic laboratories to preventive sanitation, together with the methods in use for dealing with endemic contagious diseases, and with sudden epidemics. These exhibits will be held in the Horticultural Hall, which is admirably adapted for the purpose, as well as being conveniently situated directly opposite the Hotel Walton, the headquarters of the Association. In Horticultural Hall will be located also the bureau of registration, the post-office for members, and a bureau of information.

The D. Hayes Agnew Memorial Pavilion of the University Hospital was formally dedicated with appropriate ceremonies on October 15th. Addresses were made by Dr. William F. Norris, the President of the Board of Managers of the Hospital, by Provost Harrison, by Dr. De Forrest Willard, by Dr. J. William White, and by Mayor Warwick. This new addition to the University Hospital was erected at a cost of \$160,000, to serve the purposes of a lecture-building, a hospital, and a surgical dispensary, and contains the most approved appurtenances in use. The first, second, and third floors contain amphitheatres where it is proposed to hold surgical, orthopedic, and gynecologic clinics, and the third floor also contains an operating-room for ophthalmologic cases; the ground floor is occupied by a surgical dispensary. The new building, which forms a companion wing to the William Pepper Clinical Laboratory, has a capacity of one hundred and sixty beds, with separate wards for children's diseases, for general surgery, for gynecology, for ophthalmology, and for otology.

Two of the coolie crew of a British steamship, which arrived at this port a few days ago, have developed typical symptoms of beri-beri, an outbreak of which disease occurred among the crew of the vessel during the early part of her voyage from India. In connection with this incident an interesting complication has arisen regarding the disposition of the patients, who, being Chinese, are forbidden to land, and are thus denied the advantages of proper hospital treatment while in port. Thus far the question of this privilege has been decided negatively by the officials, although should the steamer leave without these two members of her crew (and no law can compel her to carry them), it is hard to see how it is possible to avoid evading the Chinese exclusion law at least in the letter.

The last stated meeting of the section on General Medicine of the College of Physicians of Philadelphia was held on October 11th. The chairman of the section, Dr. J. C. Wilson, related the history of an interesting case of hemorrhagic pachymeningitis, with a large subdural abscess of the right frontal lobe. The patient presented early in the illness the clinical manifestations of enteric fever, but later developed monoplegia, first of the left arm, and then after the lapse of a few days, of the left leg; these signs were well marked for some time before death, which terminated a long illness. The patient's brain, which was demonstrated to the members of the section by Dr. Wilson, showed a collection of

fully six ounces of pus between the dura mater and the arachnoid of the right frontal lobe, together with a pachymeningitis of every grade of intensity; there were no thrombi in either the frontal or lateral sinuses, and the brain substance appeared to be in good condition. No lesions of the intestines were found to account for the early typhoid symptoms. Other *post-mortem* findings showed that the ileum was inflamed, and bound down by adhesions to the pubic bones, and also that the appendix was thickened and dragged from its normal situation by dense adhesions. There was slight local peritonitis in the right iliac fossa.

Dr. Charles W. Burr detailed the histories of two cretinoid cases. These individuals were brothers of the early adolescent period, and presented many typical physical peculiarities common to cretins; the mental development corresponded with that of a young child, and while not absolute idiots, memory of events impressed upon them was of a most transient and fleeting character. Dr. S. M. Hamill presented an interesting communication on "The Condition of Salivary Digestion in Anemia," which dealt with the changes in the quantity of saliva, and with its ferment power in this class of cases. Dr. D. L. Edsall, by invitation, read a paper on "The Gastric Conditions in Anemia," in which he considered the degrees of acidity of the stomach in the various anemias, and the relation of gastric lesions to pernicious anemia.

At a stated meeting of the Pathological Society of Philadelphia, held on October 14th, the following officers were elected for the ensuing year: President, Dr. W. E. Hughes; vice-presidents, Drs. F. A. Packard, C. W. Burr, Alfred Stengel, and John Guiteras; secretary, Dr. David Riesman; recorder, Dr. A. E. Taylor; treasurer, Dr. T. S. Westcott; curator, Dr. J. Dutton Steele.

The annual address was read by the retiring president, Dr. John H. Musser, who was able to report that the Society was in a most flourishing condition, having on its rolls over two hundred active members.

Dr. Richard C. Norris, Physician-in-Chief of the Preston Retreat, is seriously ill as the result of a slight wound which he received while operating upon a septic case. Septicemia of a severe type has set in, and although his attending physicians apprehend no immediate danger, his condition is considered to be serious.

Dr. H. L. Hale and Dr. J. A. Cramp have been appointed assistant-surgeons to Wills' Eye Hospital, to serve respectively in the clinics of Drs. Frank Fisher and J. W. Croskey.

The total number of deaths occurring in this city during the week ending October 16th, was 393, an increase of 48 from the number reported last week, and an increase of 30 compared to the corresponding week of last year. One hundred and sixteen of the total number were in children under five years old. There were 216 new cases of contagious diseases reported—10 more than last week, with 42 deaths from these causes. There were 137 cases of diphtheria, with 31 deaths; 51 cases of scarlet fever, with 4 deaths; and 28 cases of enteric fever, with 7 deaths.

SOCIETY PROCEEDINGS.

THE NEW YORK STATE MEDICAL ASSOCIATION.

Fourteenth Annual Meeting, Held at New York, October 12, 13, and 14, 1897.

FIRST DAY—OCTOBER 12TH.

MORNING SESSION.

THE meeting was called to order by the President, DR. CHARLES PHELPS of New York, who expressed the hope that the labors of the Fourteenth Annual Meeting would prove as interesting, and the scientific work as valuable, as they had in the past.

The Secretary then read the Treasurer's report, which showed a surplus in the hands of the Association amounting to \$6518.46. A communication was read from the American Medical Association asking that the New York State Medical Association contribute \$2000 to the Rush Memorial Fund. A resolution was offered by Dr. Manley of New York County, to the effect that the Association should appropriate \$2000 to the Rush Memorial Fund. After some discussion it was decided that the matter be laid over until Thursday morning when the vote of the Association would be taken.

The President then delivered the Annual Address, entitled

THE CAUSES OF A DECLINE IN THE AVERAGE INCOME OF GENERAL PRACTITIONERS OF MEDICINE.
(SEE PAGE 527.)

DR. SAMUEL W. SMITH of New York County read the first paper, entitled

ACUTE CATARRH OF THE MIDDLE EAR AS A SEQUEL OF LA GRIPPE.

Acute otitis media is a frequent sequel of *la grippe*, as evidenced by deep-seated pain, a profuse purulent discharge from the affected ear, and often perforation of the membrana tympana. As a result of neglect, deafness of greater or less degree occurs in seventy-five per cent. of all cases. If the disease extends into the mastoid, perioritis may appear over the bone and result in abscess, pachymeningitis, embolism, septicemia, and death. Leeches should be applied, and paracentesis early performed. The mastoid should be trephined if an abscess develops.

DR. LEROY J. BROOKS of Chenango County referred to the common occurrence of otitis media after "*grippe*," and said it was his custom to make use of the Politzer bag as soon as the earache appeared. This he used three or four times a day. He then irrigates the ear with a saline solution as hot as can be borne, using a nursing-bottle and tube for this purpose in the case of a child. These methods, when employed early and thoroughly, will prevent many cases from going on to more serious trouble. Paracentesis, which is much dreaded by the general practitioner, is a simple operation, and should be employed if there is any bulging of the drum.

DR. COHN of Erie County said that his attention was first called to this complication of "*grippe*" during the epi-

demic of 1891-92. He uses the Politzer bag, and adds to the water a few drops of chloroform, which has the effect of dilating the Eustachian tube, and affording almost instant relief from pain. Asepsis of the external ear is all important. Paracentesis, if made early and low down, will often prevent rupture of the drum. These cases become worse under the administration of quinin, therefore other antipyretics should be given to reduce the temperature.

DR. DAVIS of New York County agreed with the author that the general practitioner knows but little about ear diseases. He favors the administration of salicylate of soda to bring on profuse perspiration, and to relieve the intense nervous strain. Hot applications should be made to the ear, and a hot gargle ordered for the throat, which is usually involved.

DR. SMITH, in closing, said he did not think any man who had ever used the Politzer bag upon himself, when he had earache, would use it upon a little child, for the most intense pain results. He favored the use of leeches, paracentesis, and trephining.

WHAT SHALL WE DO TO BE SAVED?

was the title of a paper read by DR. T. J. HILLIS of New York County.

It dealt in a novel way with the abuse of medical charity, which, the author said, was not confined to cities alone, but is met with in the country as well, and that, if it were allowed to continue, a medical man not connected with a hospital would be a curiosity. The hospital, with its soup annex, is swamping the practitioner.

AFTERNOON SESSION.

DR. E. D. FERGUSON of Rensselaer County read a paper, entitled

A CURIOUS CONDITION OF THE APPENDIX VERMIFORMIS AS FOUND AT OPERATION.

The author showed two specimens illustrating unique conditions of the vermiform appendix. The first was removed from a man thirty-two years of age. The first attack of appendicitis occurred during March, 1893, and resulted in the formation of an abscess, which ruptured into the bowel. A second, but mild attack occurred during November, 1893, from which he recovered promptly. During December, 1896, he had pain, but was up and about the house until January, 1897, when he was first seen by the author. He then had high fever and pain, and a large mass was made out in the region of the appendix. He was given opium and strychnia, and an ice-bag was applied until the acute symptoms subsided. Operation was performed during February, when the disease was quiescent. It was found that the mass consisted of a portion of the cecum, lower part of the colon, small intestine, and omentum. The appendix at first was not found. While searching for it, a mass about the size of the last phalanx of the thumb was discovered between two coils of the small intestine. This proved to be the distal portion of the appendix which had been severed by gangrene. About two inches distant from the normal site of the appendix was an opening through which

a probe could be passed into the bowel. There was no evidence of pus. The stump was removed and the wound closed without drainage. This amputation of the appendix by gangrene probably occurred during 1893, at the time of the first attack.

The author exhibited a second specimen, showing circular gangrene of the appendix, which occurred in the case of a young man nineteen years of age, seen during the first day of an attack of appendicitis. He had previously had one mild attack of the disease. At the operation few adhesions were encountered, and, aside from hypertrophy of the distal end, the appendix showed little pathologic change. It was amputated close to the bowel, the stump inverted and buried by Lembert sutures. Upon close examination a narrow black line of commencing gangrene was found to completely surround the appendix.

The author expressed the opinion that cases of appendicitis should not be operated upon during a first attack, because between eighty and ninety per cent. will recover without surgical interference. Many of these first attacks are simply a catarrhal inflammation, and will recover under the use of the ice-coil, with scarcely any other treatment. No operation is more overdone than that for appendicitis, and the tendency of the day is to underestimate the risk.

DR. F. H. WIGGIN of New York County did not agree with the author in regard to postponing operation. All cases of appendicitis are surgical cases, although it is not always necessary to operate for a first attack. Mild measures, such as emptying the large bowel by enemata and applying cold to the abdomen, should be employed; but if the symptoms increase within thirty-six hours, the patient should be operated upon without delay. The pulse is a more valuable guide than the temperature. If it is 120 peritonitis of a serious character exists. Each case, however, should be studied by itself, and no general law can be followed. The mortality in these cases is not more than four per cent.

A paper, entitled

THE ABUSE OF MEDICAL CHARITY,

was then read by DR. F. H. WIGGIN. (See page 521.)

DR. WICKES WASHBURN of New York County said that his attention was first directed to this abuse as far back as 1883, when, upon investigation by the Charity Organization Society, a woman who applied at a dispensary for medical aid was found to be the owner of a house. He expressed the opinion that hospital and dispensary abuses can only be reduced by investigation, and that, in order to avoid confusion, this should be done by a central bureau. The speaker said that he was one of the members of the combined committee referred to in Dr. Wiggin's paper as being largely instrumental in passing the bill through both houses of the Legislature. He advised an amendment to the bill to the effect that instances of abuse on the part of charity institutions should be reviewed and passed upon by a judge of the Supreme Court in the district where such an institution is located. In this way, if the question were one of revoking a charter, the matter would not rest entirely with the State Board of Charities and would largely aid in doing away with the objections to the bill.

MR. JOHN HARSON RHOADES of New York attributed the abuse to the great multiplication of medical charities of this character in New York, and also to the ambition of young medical men to attach themselves to institutions already in existence, or to found new ones in connection with church charities, or independently, upon which they hoped to build reputations for themselves, and out of which they, individually, expect to earn a living and establish a practice. The secret willingness of many young practitioners to conceal facts which come to their knowledge, showing a patient's ability to pay, in the hope of securing such a patient for their private practice, is also a contributing cause. The difficulty of determining who are poor and who are able to pay, and the natural repugnance to close inquiry through fear of driving away those who are really entitled to aid—the honest poor who suffer in silence and who possess an honorable pride which prevents a disclosure of their true condition—was mentioned as an obstacle to correcting the abuse. Of still more importance, he considered the absence of a central bureau in the city where all cases and applications for charitable relief—medical or otherwise—may be investigated for the benefit of charitable institutions of all classes, sects, and kinds.

As a remedy he suggested: (1) The careful selection of young physicians for service in medical institutions and hospitals, the application of business principles in the profession, the dismissal or compelled resignation of all men appointed who prove careless, incompetent, or self-seeking—all of which lies with the medical boards. (2) The passage of a law which will compel all charitable institutions of every kind to establish a clearance bureau, which may easily be done in connection with the Charity Organization Society, each sharing in the expense of maintenance in proportion to the number of patients recorded against each. Such a law should compel all institutions to send a weekly list of the patients applying for relief, such names to be filed, tabulated, and investigated by the clearance bureau, and the result forwarded to each institution. When medical boards do their whole duty, without fear or favor, and when the State does its full duty in enforcing an intelligent and comprehensive system of investigation upon the part of all charities, public and private, sectarian and non-sectarian, the evil will be remedied, and not before. That it should be remedied speedily the true welfare of the commonwealth demands, for as it is now, what with loose, ill-guarded, and liberal charity, backed by extravagant pension laws, we are speedily creating a nation of paupers.

DR. J. E. JANVRIN of New York County heartily concurred in the conclusions of Dr. Wiggin. He said that he had had an interview with the Governor a few days before the expiration of the time in which the bill should have been signed, and that the reasons he gave for declining it were, first, that he was opposed to put so much power, especially that of revoking a charter, into the hands of any one board or commissioner, and second, he believed that any one who desired to do so had a perfect right to establish institutions, medical or otherwise, for charity or for the education of young men. The speaker also advocated a fixed salary for all house-physicians.

DR. E. D. FERGUSON of Rensselaer County said that this abuse, which has reached such a magnitude in New York, has not yet reached Troy, but that he is heartily in sympathy with the movement against it. He thought that as now framed there are legal objections to the bill which were the cause of the opposition to it. What is most needed, however, is the cooperation and support of the entire medical profession.

DR. WICKES WASHBURN of New York County said that but one opinion was expressed in Albany last winter, *i. e.*, that medical charity was greatly abused and that this should be remedied. It was insisted, however, that the profession should agree upon what was to be asked of the Legislature. The bill is, and was opposed by the medical schools, which hold out as an inducement the abundance of clinical material in New York City. The cooperation of these medical schools should be obtained.

DR. E. V. DELPHEY of New York County suggested that it should be a matter of ethics, and be considered contrary to the dignity of the medical profession for a man to serve in a dispensary or hospital which permits the abuse of medical charity.

DR. THOS. H. MANLEY of New York County expressed the opinion that the matter cannot be remedied by legal enactment, because the evil lies in the medical profession itself. The profession as a body should promulgate a rule in regard to this abuse, which, if disobeyed, will place the offender in condemnation. He suggested that the New York State Association set out in clear, definite terms, under what conditions a physician may connect himself with a hospital or dispensary service, and see to it that these conditions are properly regarded.

DR. J. R. MCGREGOR of New York County, considered the matter one to be settled by law. It is a question of obtaining something for which no equivalent is given, in other words, imposition, and the legislature should pass a law against this, as it does against other frauds. The speaker referred to the powers which worked against the bill at Albany and hinted that the Governor had not given his real reason for declining to sign it.

DR. JANVRIN then urged that a modified form of the bill be presented early in the next session of the Legislature in order that it may be passed over the Governor's veto, if this proves necessary.

Upon the motion of DR. THOMAS H. MANLEY the following resolution was adopted:

RESOLVED, That this Association is heartily in sympathy with the efforts being made to correct the hospital and dispensary abuse throughout the State, and that a committee of five be appointed by the president to represent the Association and cooperate with similar organizations in efforts to correct the said abuse.

SECOND DAY—OCTOBER 13TH.

MORNING SESSION.

DR. W. S. McLAREN of Litchfield, Conn., read a paper upon

STRICTURE OF THE RECTUM.

The subject was divided into two groups, congenital and acquired. The first variety is rarely seen, the indi-

viduals having this abnormality generally presenting imperforate anus and more or less arrest of development, and are considered as cases of the latter. Acquired stricture was subdivided into non-malignant and malignant. The former is caused by traumatism, dysentery, simple ulceration, tuberculous ulceration, and syphilis. Traumatism by violence is rare, but when it occurs is often due to the application of strong acids. Dysentery is not a common cause of stricture. By far the vast bulk of non-malignant strictures are caused by venereal disease, and they are often met with in the late stage of syphilis. Malignant stricture of the rectum is much more common than non-malignant. Obstruction of the bowel is the principal symptom, followed by a discharge of mucus caused by the irritation due to retention of feces. It is important to make a digital examination of the rectum in all cases of chronic diarrhea or constipation. The treatment is palliative or radical. In the former, measures are directed toward retarding the contraction by the use of bougies, and emptying the bowel by enemata and mild laxatives. In regard to the radical treatment, a difference of opinion exists as to whether the linear incision, as done by Mathews, is better than proctotomy. The latter operation is less dangerous and renders internal hemorrhage impossible, while the linear incision obviates future incontinence. Malignant strictures should be excised if not too extensive.

DR. E. D. FERGUSON considered the paper of great interest in that it described so satisfactorily the management of these cases. He prefers the linear incision, and emphasized the importance of dividing the stricture well down through the muscular coat, for if any fibers remain undivided, the process of contraction will continue. Dilatation with bougies will sometimes effect a cure, but the treatment is protracted and not unattended with danger. In cases in which the stricture is near the anus, immediate and satisfactory results are obtained. In cases where it is possible, the speaker makes an incision similar to that of Miculicz in pyloric stenosis.

DR. DOUGLAS AYERS of Montgomery County read a paper upon

PYOTHORAX IN CHILDREN.

The disease, which is a result of pleuritis, occurs most frequently during the first six years of life, and is rapidly fatal in infants. It is estimated that one-third of all cases of pleuritis in children go on to suppuration. The infection is usually a mixed one, streptococci and staphylococci being found as a rule, and streptococci and tubercle bacilli more rarely. The treatment consists of aspiration, incision, drainage, resection, and irrigation. The time to aspirate is at the time pus is discovered, and good results follow when this is done early. Often the pus is not completely evacuated by aspiration, and these cases should then be incised and drained. When drainage is not perfect, exsection should be performed. Recovery is generally rapid and no nidus is left for future trouble.

DR. FERGUSON remarked that the frequent occurrence of pyothorax in children is due to the great susceptibility of childhood to bronchial pneumonitis, the germs of which pass through the lung and infect the pleural cavity.

DR. JOSEPH D. BRYANT of New York County then read a paper, entitled

SOME UNUSUAL CASES OF APPENDICITIS,

which will appear in a later issue of THE MEDICAL NEWS.

DR. PARKER SYMS of New York County read a paper upon

THE SURGERY OF TUBERCULOSIS OF THE PERITONEUM,

which will also appear in a later issue of THE MEDICAL NEWS.

DR. W. E. SWAN of Saratoga County referred to a number of cases which he had seen at Johns Hopkins Hospital in the medical service of Professor Osler, who claims that many such cases recover without operation. In the same hospital he saw twelve cases which Dr. Kelly had operated upon. This operator claims that only fifty per cent. of those who recover are cured, *i.e.*, have no recurrence for five or six years. The speaker asked what Dr. Syms meant by "cured."

DR. SYMS replied that the term implied relief from symptoms. From a histologic standpoint, it is doubtful if the disease is ever cured. A case is not considered cured until two years have passed without a recurrence of symptoms. In 131 cases an apparent cure resulted in sixty-five per cent., but within two years a relapse occurred in a number, and the percentage of cures was brought down to twenty-one per cent.

DR. ELY VAN DE WARKER of Onondaga County said he had operated upon a case of this kind in 1883, which was reported at the time, and that the patient was still alive and well. Drainage should not be employed unless pus is present, which is rarely the case. The beneficial results obtained from this treatment are due, he thinks, to the thorough flushing of the abdominal cavity.

DR. SYMS, in closing, said he felt convinced that the great credit of effecting a cure in these cases should be given to the simple operation of laparotomy.

AFTERNOON SESSION.

DR. FREDERICK S. DENNIS of New York County read a paper on

TETANUS,

which will appear in a future issue of THE MEDICAL NEWS.

DR. ARTHUR Y. BENNETT of Erie County read a paper upon

MASSAGE AS AN OCCUPATION FOR THE BLIND,

in which he called attention to the large and increasing number of blind persons, most of whom are dependent upon others for their support, and said that the estimated number in this country is 56,000, of which 4398 are in this State. In order that many of these may become self-supporting, he advocates that they be taught massage in the State institutions, being trained in the anatomy and physiology of the body before they learn the practical work. He considers that the peculiar delicacy of touch which the blind possess makes them especially fit for this kind of work.

DR. CHARLES E. LOCKWOOD of New York County read a paper, entitled

A STUDY OF ALCOHOL, TOBACCO, TEA, AND COFFEE,
AND THEIR EFFECTS IN NERVOUS DISORDERS.

The author gave the results of an exhaustive study of the subject, and showed among other things that since 1870 the consumption of malt liquors in this country has been on the increase while that of distilled spirits has decreased. The fact was also demonstrated that the nations which consume the most alcohol are those whose criminality is least and whose vitality is greatest, although it must be remembered that this is but one factor in the case. Italy consumes very little alcohol, yet its criminality is appalling; Spain consumes three times less than Italy and its criminality is double that of the latter country. Norway, Sweden, and Denmark, with a population of about one-third, consume four times the quantity of alcohol used in Italy, and yet their criminality is relatively insignificant.

Alcohol was described as a stimulant in moderate doses, a narcotic in toxic quantity, and in a certain sense a food, inasmuch as it is almost entirely taken up by the system, and in that it prevents waste by retarding retrograde metamorphosis. Tobacco is a stimulant and sedative when used in moderation, and a relaxant, depressing and paralyzing when used in excess. The effect varies according to the habit, temperament, age, sex, and general constitutional conditions. It acts especially upon the spinal and sympathetic nerves and in lesser degree upon the cerebrum, cerebellum, and nerves of special sense. In large doses it is a virulent poison and acts principally upon the heart. It is a more powerful agent than alcohol in producing toxic amblyopia. Coffee and tea are nerve-stimulants in physiologic doses and nerve depressants when taken in toxic quantities. They act upon the brain by causing dilatation of its arteries, stimulate the accelerating and vasomotor centers, and also have a restorative action upon the voluntary and involuntary muscles when employed in moderation. Caffein in large doses depresses the respiration and pulse, and is a powerful poison. In immoderate doses, tea has a most injurious effect upon the nervous system.

THIRD DAY—OCTOBER 14TH.

MORNING SESSION.

The officers for the coming year were announced as follows:

President, Dr. Douglas Ayers of Montgomery County; vice-president, second district, Dr. C. E. Fritts of Hudson County; vice-president, third district, Dr. H. W. Carpenter of Oneida County; vice-president, fourth district, Dr. C. C. Fredricks of Erie County; vice-president, fifth district, Dr. N. W. Leighton of Kings County. Members of council: first district, Dr. W. H. Robb of Montgomery County; second district, Dr. E. M. Lyon of Clinton County; third district, Dr. W. L. Ayer of Tioga County; fourth district, Dr. Z. A. Lusk of Wyoming County; fifth district, Dr. J. G. Truax of New York County.

The matter of contributing to the Rush Memorial Fund was then taken up, and it was unanimously voted that

an appropriation of \$2000 be made from the general fund for this purpose.

The Secretary then read the paper of Dr. H. A. HAUBOLD of New York County, entitled

GENERAL CONSIDERATIONS CONCERNING AUTO-IN-
TOXICATION.

The author stated that recent investigations in regard to the poisons introduced into the body or spontaneously developed therein as a result of metabolism, make auto-intoxication a subject of considerable importance, and expressed his belief that the science of medicine will ultimately owe as much to physiologic chemistry as it now owes to bacteriology. As a rule auto-intoxication is secondary to infection. There is reason to believe, however, that the products of metabolism are as capable of being a causative factor in diseased conditions as are bacteriologic organisms.

DR. GEORGE TUCKER HARRISON of New York County read a paper on

ASEPSIS AND ANTISEPSIS IN OBSTETRICS, FROM THE
STANDPOINT OF PRESENT SCIENTIFIC KNOW-
LEDGE.

The author reviewed the history of asepsis and antiseptics of the puerperium from the time its importance was first recognized by Semmelweis during 1846, up to the present day. He protested against the too frequent examination and manipulation of the parts before labor, and also said there was no necessity to scrub the vagina previous to, or to administer douches during normal parturition. He emphasized the fact that by so doing the natural mucus secretion of the vagina, which besides lubricating the birth canal possesses germicidal properties, is washed away. He advocated external examination and cleansing of the outside parts only.

The Secretary announced that the President had appointed the following members to act as a committee to represent the New York State Medical Association in the matter of the hospital and dispensary abuse: Drs. Frederick H. Wiggin, S. B. C. McCloud, Parker Syms, A. H. Hubbell, and E. D. Ferguson.

DR. H. D. DIDAMA of Onondago County then read a paper, entitled

NON-ALCOHOLIC TREATMENT OF DISEASE.

The author earnestly protested against the use of alcohol in treating disease, and said that experiments have shown that even when used in small quantities it has a tendency to paralyze the higher brain centers. It is a depressant rather than a stimulant. It is not a food. It retards instead of aiding digestion. Its power to check the natural metabolism of tissues and delay the excretion of effete matter is not beneficial. The substitution of other drugs produces better results.

A paper upon

YELLOW FEVER

was read by DR. A. M. FERNANDEZ DE YBARRA of New York County, in which he emphasized the importance of allowing these patients liquid food only, even during convalescence. No stimulants should be admin-

istered with the exception of a little iced champagne occasionally.

The retiring President then introduced the newly elected President, DR. DOUGLAS AYERS, who thanked the members for the unexpected honor which they had conferred upon him, and said that he would do all in his power to make the next meeting of the Association a successful and profitable one, and asked the cooperation of all in urging a larger attendance at the annual meetings. The session was then declared adjourned.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

*Twenty-third Annual Meeting, Held at Louisville, Ky.,
October 5, 6, 7, and 8, 1897.*

DR. L. HARRISON METTLER of Chicago read a paper, entitled

NEUROSES OF GOUT,

in which he stated that the presence of uric acid in the system is not the cause of the neurotic manifestations in patients of gouty diathesis. The followers of Haig's chemic theory believe that they are caused by the presence of uric acid in the blood; that the acid affects the vasomotor system and so alters local nutrition. Others are of the opinion that the neuroses as well as the special symptoms of gout are but an expression of a purely neurotic diathesis—neurotic theory. Still others, with whom the speaker agrees, adopt the view that a nervous constitution, acquired or inherited, is the essential cause, the background as it were, of true gout and its manifestations. These latter may be aggravated or made to assume variable appearances by the associated auto-intoxication, which is but a product of faulty metabolism produced by the original altered innervation, *viz.*, that such gouty manifestations are the result of a trophoneurosis. He stated, further, that the altered innervation deranges the metabolic functions of the tissues, and as a result certain toxic excrementitious substances are overproduced or uneliminated, and finally these, reacting upon an unstable nervous apparatus, produce the various neuroses.

He maintained that the excrementitious products as revealed by the alloxmic substances in the urine consist of the combined uric-acid and xanthin bases. In gout the uric acid is frequently diminished in amount, but the increase of the xanthins explains the total increase of the alloxmic bodies. With Kalisch and some other investigators, he believes that it is the retention of the xanthins which causes the symptoms of gout. On the other hand, uric acid—which, as is now known, occurs only in the kidneys and when found in the blood has been reabsorbed—enters into combination in the blood to produce the urate of soda, which, for some unexplained reason, is deposited in the joints.

The symptoms of lithemia and of certain forms of neurasthenia, he believes, are also due to the retention of xanthins, as these diseases have many features in common with gout, chief of which is auto-infection. The uric-acid is significant in but one of these, *viz.*, gout, in

which it assists in the production of arthritic deposits. Such deposits can hardly be said to be the essential feature of gout, as they are very like certain deposits occurring in cerebrospinal meningitis, tabes, and other organic nervous diseases. The retained toxins, especially the xanthin group, are responsible for the symptom-complex characteristic of gout, lithemia, and neurasthenia.

Among the neuroses observed by the speaker are cephalalgia, epilepsy, chorea, convulsions, vertigo, pain—including neuralgia and psychic pain—hysteria, exophthalmic goiter, asthma, nervous dyspepsia, diabetes, multiple neuritis, facial paralysis, cerebral apoplexy, and aphasia. It will be seen that the speaker agrees with Haig and Munchison in assigning lithemia as the cause of many neuroses, but that he differs from them in giving the credit to an auto-intoxication of which uric acid is of less etiologic importance than the xanthin bases.

DR. J. M. BALL of St. Louis read a paper, entitled

REPORT OF SOME CASES OF OPHTHALMIC SURGERY.

The author gave an account of several cases of injury to the eye in which the proper surgical treatment proved satisfactory. One case of interest was a pseudoglioma, in which enucleation was performed. Another was the case of a man sixty years of age who had received 60 grains of quinin within twelve hours, and in whom the next morning there was total blindness. A diagnosis of quinin amaurosis was made.

THE REMOVAL OF ADENOIDS FROM THE VAULT OF THE PHARYNX

was the title of a paper by DR. L. C. KLINE of Indianapolis, in which he stated that there is great diversity of opinion regarding the use of anesthetics in the removal of adenoids. The majority of patients may be operated upon with equally good results by the use of cocaine. The author prefers the gradual operation to that made at one sitting, for the reason that there is less danger of subsequent hemorrhage and otitis. A forceps which the author uses was exhibited. When an anesthetic is employed a mouth-gag is necessary. In tuberculous cases the application of ichthyol is very beneficial. Various astringents may be employed with advantage, but surgery is the only sure means of affording relief.

DR. J. HOMER COULTER of Chicago followed with a paper, entitled

SURGERY OF THE AIR-PASSAGES IN CHILDREN.

He considered the subject one of great importance because of the high percentage of deaths from diseases of the air-passages during childhood, and because reflexes in childhood are more prominent and frequent than in adults. The parents of to-day should be taught that, with our modern methods, technic, and usually favorable prognosis, surgery in children is not the nightmare it formerly was. There is no longer any question of the bad effect of nasal obstruction upon adjacent organs. Any of the causes of nasal obstruction in children tend to septum deflection in adult life, and if for no other reason the physician is bound to give them all possible relief. Catarrhal deafness is almost always due to nasal obstruc-

tion. The entire field of pathologic conditions of the nose does not lie in the post-nasal space, nor is there any good reason why occlusion of the anterior chambers of the nose should not produce as many reflexes as does hypertrophy of Luschka's tonsil.

TREATMENT OF WOUNDS BY THE OPEN METHOD.

A paper upon this subject was read by DR. J. B. TAULBEE of Mount Sterling, Ky. Our present methods of treating amputations are different from those of a quarter of a century ago. A routine method is never a good one; hence each individual case is a law unto itself, both as regards irrigation and the kind of drainage, and whether or not temporary drainage should be instituted.

DR. F. F. LAWRENCE of Columbus, Ohio, read a paper, entitled

HYSTERECTOMY.

In what cases is hysterectomy justifiable? We must consider (1) how many patients would have died without this radical operation; (2) how many would have been hopeless invalids without it; (3) how many could have been cured by other means, and (4) the remote conditions or reflex results in those upon whom the operation has been performed. Hysterectomy is usually undertaken for cancer, pyosalpinx, fibromata, myomata, tuberculosis, and prolapsus. Hysterectomy for cancer is of doubtful utility, but when necessary should be done by the abdominal route. In pus-tubes the operation should be limited to those in which the walls of the uterus are involved in the diseased process. Simple adhesions are not sufficient reason for the performance of this operation. Small fibroids involving only the lower segment of the uterus should be treated tentatively. If the small fibroids are in the body of the uterus, they should be treated either by means of curetting, removal of the tubes and ovaries, or by hysterectomy, as the case demands. If the fibroids are small and occur about the time of the menopause, curettage, with electricity, is sufficient. For large fibroids growing after the menopause, hysterectomy is the only thing to be considered. In myomata or tuberculosis, this operation likewise affords the only prospect of relief. By removing the ovaries and tubes all of the diseased tissue is not taken away. Any method of operating should be judged by its safety from complications, the preservation of a firm pelvic floor, facility of operating, and the general results to both patient and operator.

DR. HENRY P. NEWMAN of Chicago read a paper, entitled

PELVIC DISEASE WITHOUT LOCAL SYMPTOMS,

in which he said that pelvic disease of an aggravated type is often present without noticeable local symptoms; that reflex symptoms begin in mere functional disturbances, and might become so serious as to endanger the life and health of the patient, and finally give rise to misdirected treatment, which does not recognize the existence of the real disease. It is necessary to understand the relative importance of pelvic irritation of certain obstinate and severe affections of more distant organs. This is very essential to a correct diagnosis in many

cases. Failure to exclude pelvic disease in the same manner as we exclude diseases of other important organs is unscientific and reprehensible.

DR. BAYARD HOLMES of Chicago contributed a paper, entitled

THE DIAGNOSIS OF SURGICAL DISEASES OF THE KIDNEYS, BLADDER, AND PROSTATE.

In his paper the author called attention to some methods of diagnosis of special value, and related at length his experience in their application, demonstrating by means of the Kasper cystoscope his method of catheterizing the ureters. He further demonstrated that the kidney could be exactly localized by auscultatory percussion.

DIAGNOSIS BY INSPECTION OF THE URINARY TRACT

was the title of a paper presented by DR. JOSEPH R. EASTMAN of Indianapolis. The use of the cystoscope is particularly important in the male. Its value in diagnosing vesical calculi, foreign bodies, neoplasms, and pathologic conditions resulting from gonorrhea, locating fragments after litholopaxy, etc., is positively determined. In the female its range of usefulness is still wider and its application more simple. The author clearly described and demonstrated the difficulties and technic of catheterization of the ureters.

In the discussion which followed DR. CORDIER said he had recently made some experiments with the X-rays in bladder work. He had, by placing a small photographic plate in the vagina and the rays above the abdomen, secured very excellent photographs. In the male the plate could be placed in the rectum and similar results obtained. Foreign bodies or calculi could be positively detected.

DR. LEON STRAUS of St. Louis read a paper upon

PRIMARY TUBERCULOSIS OF THE RECTUM, WITH REPORT OF CASES.

Tuberculosis of the rectum is a surgical disease. A thorough microscopic examination must be made in every case of suspected ulceration. The author reported four cases of removal of the ulcerated rectal tissue, and described his operation. Recovery followed in all but one of the cases. His conclusions are: (1) Primary tuberculosis of the rectum is not so infrequent as is generally supposed; (2) it is always surgical; (3) it cannot be diagnosed positively and invariably by the usual clinical symptoms, and (4) the microscope must be employed in order that a correct diagnosis may be made; (5) such cases can only be cured by thorough curettage or excision, or both; (6) some of the most hopeless cases are cured by repeated operations.

DISEASES OF THE RECTUM AND SIGMOID AS A FACTOR IN GENERAL DISTURBANCE

was the title of a paper presented by DR. J. R. PENNINGTON of Chicago. Various authorities are agreed that the *materies morbi* of a large number of somatic, mental, and nervous diseases have their origin somewhere in the gastro-intestinal tract. The importance of the rectum and sigmoid in many auto-intoxications is

entirely overlooked, and in consequence the primal defect is not located.

The next contribution, entitled

TREATMENT OF HERNIA IN OLD MEN,

was read by DR. A. J. OCHSNER of Chicago. It is a well-known fact that herniæ in men become more troublesome after the age of fifty. According to some authorities this fact is due to relaxation of the tissues, a tendency to obesity, and lowered vitality in general, but the author is convinced that the most important cause lies in the pressure exerted in evacuating the bladder and rectum, or the presence of an enlarged prostate. He described his operation for the radical cure of hernia in connection with castration for enlarged prostate. In cases in which there is simply hypertrophy of the prostate, the gland subsequently decreased in size very rapidly, affording much relief. If the surgeon has perfect control of his methods, securing perfect asepsis, the operation is absolutely safe. It relieves the patient of much discomfort, and every argument in favor of operation for the radical cure of hernia is applicable to the operation for resection of the spermatic cord for the relief of symptoms due to enlargement of the prostate gland. It is as yet too early to determine positively whether or not the favorable results obtained by the author in his cases would be permanent, but he had every reason to believe that such would prove to be the case.

DR. ROBERT T. MORRIS of New York read a paper upon

POST-OPERATIVE HERNIA IN CASES OF APPENDICITIS.

Operators are now using a much smaller incision than formerly, in order to avoid the subsequent occurrence of hernia. A pad over the seat of operation induces hernia by causing absorption of the new connective tissue as it is formed. The fibers of each muscle should be separated with the greatest care, and the same care is necessary in dividing the peritoneum. In closing the wound, each different layer of muscular tissue, as well the peritoneum and fascia, should be united with the same tissue from which it was separated in the beginning, so that the lines of muscular traction will not be disturbed, and then hernia is not so likely to result. The patient should be kept in bed for at least twenty-one days following the operation.

DR. JOHN YOUNG BROWN of St. Louis read a paper, entitled

SOME REMARKS ON APPENDICITIS,

in which he said conservatism had given place to knowledge in the treatment of this disease. The knowledge is now sufficiently comprehensive and accurate to afford a satisfactory working basis.

In the discussion which followed DR. MORRIS said that making a date to operate upon a case of appendicitis is certainly undesirable. The surgeon could not always wait until the third day. Rigor meant that toxins were entering the circulation and producing an impression upon the sympathetic system.

TUBERCULIN IN DERMATOLOGY

was the title of a paper read by DR. A. RAVOGLI of Cin-

cinnati, in which the author drew the following conclusions: (1) Tuberculin is a valuable aid in dermatology, both as a diagnostic and therapeutic agent. (2) In lupus it acts remarkably well as a systemic treatment, particularly in conjunction with other means for the purpose of reducing infiltrations. (3) After a large number of injections he has never observed any bad effects. (4) Old tuberculin had given more marked reaction, both general and local, than the new. (5) In cases over which no remedy had an influence, tuberculin promptly caused a disappearance of the eruption, healing of the ulcerations, and a general improvement in the condition. (6) If relapses occur after discontinuing the use of tuberculin the remedy should not be blamed. (7) To insure recovery, tuberculin must be used in small doses, administered at short intervals, and employed for a considerable time.

DR. B. SHERWOOD DUNN of Los Angeles, Cal., read a paper, entitled

MOTHERS AND DAUGHTERS,

in which he stated that higher education, according to many authorities, is detrimental to motherhood. He pointed out some of the fundamental errors in modern education and the training of girls, showing that, although upon the care of our children depends their lives and moral welfare, yet in our modern system of education not a word of instruction relative to the treatment of offspring is ever given to those who would become parents. He considered at length the necessity of the more careful physical training of girls. Labor, exercise, and food are important elements in training, and above all, they should have a proper knowledge of the physiologic functions peculiar to their sex.

FURTHER OBSERVATIONS IN THE USE OF HYDROGEN DIOXID IN THE TREATMENT OF BLEPHARITIS MARGINALIS

was the title of a paper presented by DR. S. C. AYERS of Cincinnati. This disease, unchecked, produces gradual destruction and atrophy of the hair-bulbs from chronic ulceration. Mercurial ointments have long been used and are well adapted to some cases, but irritating to others. An alkalin wash is very beneficial for softening the crusts; but in hydrogen dioxid the author thinks we have a remedy which both softens and dissolves. After using this drug, applied by means of a probe or scoop, the crusts may be easily removed.

DR. H. W. WHITTAKER of Columbus, Ohio, read a paper upon

CHRONICALLY DISEASED TONSILS.

Seriously diseased tonsils are frequently underestimated in importance and left untreated, when they undoubtedly are very injurious to the general health. Hypertrophy of the tonsil is found in childhood; hyperplasia in the adult. The causes which induce chronic tonsillitis may be predisposing or exciting. Among the former, the most important is heredity, and among the latter diphtheria, and the exanthemata are the usual causal agents. The author gave a comprehensive description of the symptoms usually present. Prognosis is good, providing excision

is properly performed. The voice is vastly improved both in tone and quality after excision of the tonsils, and no deleterious effects ensue.

DR. J. F. BARNHILL of Indianapolis presented a paper, entitled

HYPERTROPHIED FAUCIAL TONSILS.

The system suffers little or nothing from ablation of the normal glands. The author's classification is: (1) Those in which the patient claims never to have suffered inconvenience from the tonsils; (2) those in which quinsy or tonsillitis occurs one or more times a year; (3) a small, flat, yet pathologic gland. In all cases the diseased crypts should be cleansed. Pathologic tonsils frequently are a cause of reflex neuroses. Various methods of treatment were considered, and the merits of each pointed out.

DR. FRANK P. NORBURY of Jacksonville, Ill., read a paper upon

INSANITY OF ADOLESCENCE,

in which he drew the following conclusions: (1) Adolescent insanity is a pure psychosis, dependent upon hereditary factors and acquired conditions, which especially inhibit the higher psychic centers and later the sensory motor functions of the cortex. (2) That the vasomotor and trophic centers are involved. (3) That the sympathetic nervous function is disturbed, which, in females, is apt to eventually result in suppressed menstruation, or even sexual excitation, producing nymphomania. (4) Masturbation is a complication which, in the male, is apt to cause reflexes.

THE TREATMENT OF CEREBROSPINAL SYPHILIS

was the title of a paper read by DR. A. E. STERNE of Indianapolis. In the treatment of syphilis of the brain and cord ordinary therapy is wholly inadequate, if not entirely wrong. The dose of the iodids is too small; the potash salt is inferior to the sodium salt, particularly when large doses are employed. The syphilitic lesions of the brain and cord may involve the meninges, the brain and cord tissues with gummy formation, the bony parts, and the blood-vessels. The author drew attention to three important points in diagnosis and therapy: (1) In producing reflexes with the percussion-hammer there occurs a second prolonged contraction across the muscle at the point of the blow; (2) the iridic reflex to light is sometimes difficult to determine, and is not always present; (3) when capillary pulsation occurs it indicates high arterial tension, and serves as a guide in the use of heart-stimulants.

THE MOTOR NEURON IN PRACTICAL DIAGNOSIS

was the title of a paper read by DR. HUGH T. PATRICK of Chicago. The author made a concise statement of the more practical relations of the neurons of the motor tract. A neuron, as he explained, is simply a nerve unit, and the motor-tract is entirely composed of two distinct sets or neurons, an upper and lower. A lesion of either causes paralysis, but the customary accompanying symptoms are radically different in the two groups. The *rationale* of these differences was briefly indicated, and it was explained that in a lesion of the upper neurons

the paralysis is spastic, accompanied by increased deep reflexes, absence of atrophy, and change in electric reactions. On the other hand, in a lesion of the lower neurons, the accompanying and distinctive signs are flaccidity, loss of deep reflexes, the occurrence of atrophy, and the reaction of degeneration. It was further stated that it does not make any difference which part of the neuron is affected, the result in all respects being exactly the same.

DR. ZENNER of Cincinnati read a paper upon

TOBACCO NEUROSES.

In very many instances tobacco is only one of the many causes of an existing malady. Among the other factors often conjoined with it which make a correct diagnosis more difficult are alcohol, coffee, mental-strain, worry, etc. Syphilis often plays an important part. The neuroses traced to tobacco are functional diseases of the heart, amblyopia, tremor, vertigo, neurasthenia, some forms of neuralgia, rarely angina, and the lesser nervous disturbances, epilepsy, various psychoses, and even paresis has been attributed to it, although it seems without sufficient reason. The treatment is abstinence. The mere lessening of the amount usually fails altogether. Frequently, abstinence of a year or more permits a return to the use of tobacco in moderation without resulting harm.

A very instructive and exhaustive paper was read by DR. HOMER M. THOMAS of Chicago, entitled

EXPERIMENTAL WORK ON THE PENETRABILITY OF VAPORIZED MEDICAMENTS IN THE AIR-PASSAGES.

Do vapors enter the alveoli of the lungs? All observers have questioned such a possibility. The greatest difficulty has been in the instruments for vaporization, in that they have failed to break an oil into sufficiently fine particles. The author related in detail the results of his experiments, which had been made mostly upon animals during the past two years, and gave his reasons for believing that under proper conditions the medicament will enter the healthy lung, even to the alveoli. A variety of microscopic slides were exhibited, taken from the lung of a patient by whom inhalation had been practised shortly before death, and which plainly showed the oil-globules in the alveoli.

EPISTAXIS IN THE MOST SERIOUS FORM, WITH REPORT OF A CASE NECESSITATING LIGATION OF THE COMMON CAROTID

was the title of a paper presented by DR. MAX THORMER of Cincinnati. The author considered serious only those cases in which the ordinary styptics fail to check the hemorrhage. He referred to four instances in which the radical operation of tying one or both carotids was practised, two of which proved fatal. The paper closed with a reference to his own case, which was that of a man struck with an iron ring across the bridge of the nose and right side of the face. Unconsciousness and profuse bleeding from the nose followed. The patient was removed at once to the hospital and the nose plugged. During the next eighteen days the nose was tamponed repeatedly, both anteriorly and posteriorly, but each time after the removal of the packing the hemorrhage started afresh within a short time.

The patient, becoming almost exsanguinated, with high pulse and temperature, an operation was decided upon. The common carotid was ligated. The hemorrhages did not recur, and the patient was discharged one month after the operation.

DR. WILLIAM E. WIRT of Cleveland contributed a paper upon

THE TREATMENT OF SCOLIOSIS,

in which he referred to the use of dry heat at a high temperature for the treatment of this condition. He recalled the fact that he had originated this treatment three years ago, and had been experimenting extensively along this line ever since. He explained in detail the apparatus used to enclose the heat about the joint, and by reference to several well-authenticated cases, showed the certain value of dry heat in the therapeutics of scoliosis.

DR. A. H. CORDIER of Kansas City, Mo., read a paper, entitled

SOME PHASES OF EXTRA-UTERINE PREGNANCY.

This condition is not recognized and diagnosticated as it should be by the general practitioner. The application of common sense and good judgment is the best guide in bringing about a successful termination of ruptured tubal pregnancy. If a blood-vessel is injured and bleeding, it should be tied. The diagnosis is usually not very difficult. A very important point is the menstrual history, which should be thoroughly investigated. A tube having once ruptured will continue to give trouble. The dangers of the condition far outweigh the dangers of good surgery. Operation should be performed at the earliest possible moment. No case is devoid of danger until the bleeding vessel is firmly tied.

THE TREATMENT OF SUPPURATING FISTULOUS TRACTS.

This paper was read by DR. E. J. SENN of Chicago. The primary dressing should not be disturbed for four or five days, when, if necessary, it is removed and repeated. Nitrate of silver or other caustics should not be used, as the granulations are only superficially destroyed, leaving a necrotic area. If the granulations are persistently sluggish, the wound should occasionally be packed with gauze, saturated with balsam of Peru, as this agent stimulates the regenerative capacity of embryonal cells without impairing the vitality of the surrounding tissues. In the author's hands, most obstinate fistulæ have yielded under the treatment suggested, where previous antiseptic irrigation proved of no value.

Amendments to the Constitution, enlarging the duties of the secretary and providing a salary for his services, were adopted. Action was taken with regard to the permanent preservation of the "Transactions of the Association."

A resolution rescinding action previously taken relative to the reported quarantining of Louisville by the State of Indiana, was unanimously passed.

The following officers were elected: President, Dr. John Young Brown of St. Louis; vice-presidents, Drs. A. J. Ochsner of Chicago, and A. P. Buchman of Fort

Wayne; secretary, Dr. Henry E. Tuley of Louisville, Ky.; treasurer, Dr. Charles A. Wheaton of St. Paul. The next meeting of the Association will be held at Nashville, Tenn., the second Tuesday in November, 1898.

THERAPEUTIC HINTS.

For Gastric Ulcer.—

℞	Codeini phosph.	} aa	gr. v
	Ext. belladonnæ		
	Bismuthi carb.		gr. i
	Lactose		3 i.

M. Ft. chart. No. xv. Sig. Take two or three powders daily.—*Leube*.

For Lumbago.—

℞	Potassii iodidi	3 ss
	Tinct. opii deodoratæ	3 ii
	Spts. lavandulæ comp.	3 i
	Spts. ætheris nitrosi	3 ss
	Aquæ destillatæ	3 xii.

M. Sig. Take two tablespoonfuls twice daily.—*Brodie*.

For Acute Mania, with Motor Excitement.—

℞	Ext. gelsemii fld.	3 iii
	Syrupi acidi citrici	3 ii
	Aquæ destillatæ	3 xi.

M. Sig. A teaspoonful to be taken every two hours until physiologic effects are produced.—*Bartholow*.

For Melancholia.—

℞	Zinci valerianatis	} aa	3 ss.
	Ferri valerianatis		
	Quininæ valerianatis		

M. Ft. massa et in pil. No. xxx div. Sig. One pill to be taken three times daily.—*Wilson*.

For Sciatica.—

℞	Tinct. cannabis indicæ	3 vi
	Syr. acaciæ	3 iss
	Aquæ destillatæ, ...	q. s. ad. 3 vi.

M. Sig. A tablespoonful to be taken every four to six hours.—*Neligan*.

For the Removal of Superfluous Hair the following is recommended:

℞	Tr. iodi	3 parts
	Ol. terebinth.	6 parts
	Ol. ricini	8 parts
	Spiritus	48 parts
	Collodii	100 parts.

M. Sig. The affected part is to be painted with this mixture once daily for three or four successive days.

When the collodion scab is removed the hairs will be found imbedded in its lower surface.—*Putte*.

For Hypertrophy of the Tonsils.—

℞	Iodi pur.	gr. i
	Potassii iod.	gr. ii
	Tr. opii	gr. xx
	Glycerini	3 iv.

M. Sig. With this mixture the tonsils are to be painted morning and evening; it should also be used as a gargle, diluted in the proportion of one-half a teaspoonful to a glass of warm water.—*Moure*.

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ORIGINAL ARTICLES.

THE CLINICAL IMPORTANCE OF IMPACTED AND ADHERENT PELVIC TUMORS.¹

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SOME apology would seem necessary for introducing a subject which apparently is of interest only to specialists. A little reflection, however, will convince every one that it closely concerns the general practitioner, for his attention is frequently directed to phenomena, the proper appreciation of which would lead to the inference that he has to deal with a condition which can only be treated surgically in order that the patient may be saved serious trouble in the future. The subject is not new; neither is there anything new in regard to the early recognition of carcinoma of the cervix uteri, yet it is notorious that in spite of the stress which is laid in every monograph and text-book upon the importance of recognizing the initial symptoms of this disease, not one case in fifty in this country is referred to the surgeon during the operable stage, while the histories of these unfortunates show that local pains, atypical hemorrhage, etc., which should have awakened the gravest suspicion, are explained as due to neuralgia, or the climacteric, no local examination being made until too late. For the same reason, pelvic neoplasms often remain unrecognized for a long period, while the pressure-symptoms to which they give rise are misinterpreted. There is another reason why this subject is of special interest; it clearly illustrates the close relation between gynecology and general medicine, a union which ought not to be disturbed any more than that which exists between obstetrics and the diseases of women.

I need not enumerate the different varieties of intrapelvic neoplasms, or call your attention to the elementary fact that a growth varying in size from that of an English walnut to a baseball may possess neither clinical nor pathologic interest so long as it is freely movable and does not press upon adjacent vessels or nerves. But let such a tumor, whether it be a cyst or subperitoneal fibroid, become impacted in Douglas' pouch, or surrounded by inflammatory exudate, and the entire situation is changed. Marked symp-

toms arise, and the patient's comfort, general health and perhaps even her life are concerned. This may be illustrated by briefly citing the history of a case seen within a week. The patient, a strong, healthy primipara, aged thirty-five years, had never had any local symptoms whatever until after the birth of a child five months ago, the labor being a protracted one and terminated by the use of forceps. The pelvis was of normal dimensions, and dystocia was supposed to be due to rigidity of the soft parts. Convalescence was afebrile, and the patient soon resumed her household duties, but found that she tired easily, had a sensation of pressure at the lower end of the spine, and was obliged to micturate at frequent intervals, this act being followed by severe tenesmus. Menstruation returned, and was normal. The natural inference was that she was suffering from the retroversion so common after difficult parturition, lacerations of the pelvic floor, subinvolution, etc., but local examination revealed a hard, immovable tumor filling the posterior cul-de-sac, and apparently adherent to both uterus and rectum. It is probable that this neoplasm (either an ovarian or subserous uterine fibroma of long standing), was carried up out of the way during pregnancy, undoubtedly increasing in size under the influence of the physiologic congestion of gestation, and, when the uterus was suddenly emptied, dropped down into the cul-de-sac, where it became impacted. It is easy to see how serious might have been the result had this occurred at an early stage of pregnancy.

It may be stated, in brief, that the points of interest to the general practitioner in connection with impacted pelvic tumors are as follows: The symptoms which they occasion are often referred to diseases of the pelvic or abdominal viscera, and patients are treated for a long time without relief, when the condition is mechanical rather than inflammatory or functional (neuralgia). The amount of pain and visceral disturbance frequently is entirely out of proportion to the size of the new growth, and distant organs may be affected (as the kidneys, through pressure on the ureters). Even when the presence of the neoplasm is recognized its importance may be underestimated. Finally, the complication of these tumors with pregnancy and parturition is so important as to deserve the most serious attention.

As regards their relative clinical importance, intrapelvic tumors vary according to their anatomic char-

¹ Read at a Stated Meeting of the New York County Medical Society, October 25, 1897.

acter, mode of development, and locality. Thus, a pus-sac or dermoid cyst would naturally give rise to more serious symptoms than a simple ovarian or parovarian cyst; a rapidly growing cystoma possesses more significance than a small subperitoneal fibroid. The inflammatory exudate thrown out around a pus-tube, suppurating cyst, or dermoid, or a ruptured ectopic, produces various disturbances aside from mere mechanical pressure. Again, a tumor impacted in Douglas' pouch possesses more clinical importance than an intraligamentous growth of the same size and variety, or one adherent to the upper border of the broad ligament. It is self-evident that in estimating the seriousness of the condition in a given case, and the indications for operative interference, all of these factors must be considered.

For practical purposes we need only refer to tumors situated in Douglas' pouch, since these are the most common, and attended by the most characteristic symptoms. The most obvious effects resulting from the presence of an impacted tumor are those due to pressure. The uterus, from its mobility and intimate relation to the neoplasm, is apt to be first affected, ante- or lateroflexion, less often prolapsus, being a result. Retroflexion and ascensus are due rather to accompanying adhesions than to mechanical pressure. *Procedentia*, occurring in a young woman with a firm pelvic floor (with the exception of certain rare cases of acute displacement), should be regarded as an evidence of probable pressure upon the organ from above. Following this clue, I have, on several occasions, discovered unsuspected neoplasms which had not given rise to local symptoms. It is an evident fact that the rectum is always more or less encroached upon by growths situated in the cul-de-sac, the degree of occlusion of its lumen varying with the size of the uterus and the intimacy of its adhesion to the parts. The bladder naturally shares in the pressure effects produced upon the uterus, dislocation of the viscus causing traction upon the fixed point, the neck, with the attending disturbances. Still more serious are the results of direct pressure caused by fibroids in the lower uterine segment, secondary malignant nodules, etc. Prolonged impaction may lead to cystitis and pyelitis, and perhaps terminate fatally.

The results of pressure on the intrapelvic portions of the ureters by growths in the lower uterine segment or at the base of the broad ligament, are well known. It is interesting to note that in not a few instances the cause of a hydronephrosis has been found to be occlusion of the duct by the pressure of a tumor so small that it had escaped notice. In a previous paper I have called attention to the importance which a small exudate in the broad ligament may assume through its relation to the ureter.

The general venous congestion of the pelvic organs in connection with impacted tumors is frequently noted upon the operating-table. Varicose veins of the labia and hemorrhoids present external evidence of obstruction to the circulation. The tendency of impacted growths to become adherent to neighboring organs is a matter of common knowledge, especially in the case of dermoids of the ovary. In many instances the inflammatory process seems to be due simply to prolonged friction of opposed serous surfaces, but in others there is evidence of general pelvic peritonitis. It is a common fact that where the adhesions are found most firm and extensive, there may have been no history of a previous attack of pelvic inflammation, and the patient is remarkably free from pain.

The difference between an impacted and an adherent tumor is an important one from both a surgical and an obstetric standpoint. When the neoplasm is attached to the uterus and rectum, the pressure effects already noted are exaggerated. If the small intestine or appendix be adherent to the tumor, other disturbing effects are noted, which need not be enumerated here. The intimate relation of an intrapelvic cyst to the hollow viscera, especially to the large intestine, favors septic infection of the cysts-contents, and the discharge of the contents of a dermoid from the rectum or bladder is sometimes the first indication of the existence of a tumor. A small growth, which previously gave rise to no symptoms whatever, may, under the influence of pregnancy, not only increase in size, but from adhesions, be permanently imprisoned in Douglas' pouch. This is well illustrated by the following case, which is one of the three that have been under my observation:

The patient had never had pelvic symptoms. After a normal pregnancy, during which I had examined her several times with a negative result, as the labor pains began a cystic tumor the size of a lemon could be felt behind the uterus, which I was unable to push upward. However, as the head descended the cyst slipped out of the way and delivery was soon effected. Subsequently, I could not detect the tumor, the patient being quite stout. I lost sight of her for nearly three years, when she returned during the fifth month of pregnancy. The cyst was again detectable in Douglas' pouch, considerably larger than before, and firmly adherent. It still caused no symptoms. A few days later the growth was removed by abdominal section, and proved to be a dermoid cyst with a long pedicle, which was attached by recently formed adhesions to both the uterus and the rectum. Pregnancy was not interrupted, and spontaneous delivery occurred at term.

The importance assumed by the small fibroid in the lower uterine segment is entirely out of proportion to its size. This is illustrated by a case in which

a tumor had existed for a period of ten years without causing symptoms until it compressed the ureter, with resulting hydronephrosis. Yet it was necessary to deliver the woman by means of a Cæsarean section, and the growth, insignificant though it was, eventually caused the patient's death from the kidney disease which had been induced.

The symptomatology is especially interesting to the general practitioner. As has been stated, many intrapelvic tumors of long standing are accompanied by singularly few symptoms, and those ill defined. Local pain naturally directs attention to the pelvis. As in the case of carcinoma of the uterus, the more severe, throbbing, and lancinating pains are due rather to the accompanying inflammatory process than to the mechanical pressure of the growth. Pain emanating from abnormal conditions of the sacral, sciatic, and genitocrural nerves is often mistaken for rheumatism, and is treated as such. In a case now under observation an impacted ovarian tumor gives rise not to local but to reflex intercostal neuralgia and also hemicrania, exaggerated at the menstrual periods. There is no dysmenorrhea, or in fact any other symptom, except a slight sensation of pressure upon the rectum. Colicky pains, localized in the appendic region, etc., are common in connection with extensive intestinal adhesions. In two instances, sudden dislocation of a subperitoneal fibroid into the pelvis closely simulated rupture of an ectopic sac. The rectal symptoms are quite characteristic, chief among which is a feeling of obstruction in the passage of fecal matter, and tenesmus following defecation, with a sensation as if the lower bowel were not completely emptied. Whenever these symptoms are mentioned I always think of possible compression of the rectum by a tumor. More or less complete occlusion of the lumen, indicated by the small caliber of the fecal movement, of course, suggests such a condition, in the absence of symptoms of malignant disease of the part. Chronic proctitis is often present in these cases. On more than one occasion I have been led to suspect the presence of an intrapelvic growth in a young girl by reason of obstinate hemorrhoids, which could not be explained in the ordinary way. In one instance this was the only symptom, if I may so call it, of an impacted dermoid. The bladder is so sensitive to all disturbances of the pelvic equilibrium that one would expect frequent micturition and tenesmus to be common, and such is the case. In fact, these sometimes furnish the only evidence of the presence of a growth which encroaches upon the pelvic organs. These same symptoms, it should be added, also accompany ureteral troubles, to which allusion has been made. In the absence of satisfactory evidence of disease of the urinary tract it is

always well to bear in mind the possibility of pressure upon or dislocation of the bladder by a neoplasm.

As far as the uterus is concerned, the symptoms referable to the tumor, though not characteristic, are useful because they lead one to examine the pelvis which, in the absence of less definite symptoms might be neglected. Flexions give rise to dysmenorrhea. Menorrhagia, referable to the hyperplastic endometritis, which is the result of the uterine congestion induced by the presence of the tumor, is rather an important symptom, especially in unmarried women in whom menstruation has previously been normal. This, in connection with the pressure symptoms before mentioned, should lead the practitioner to insist upon an examination, which can be efficiently made per rectum.

As regards the question of diagnosis, it is assumed that we are not considering those cases in which there is a clear history of long-standing pelvic trouble, or in which the sudden onset, severe pain, febrile disturbance, etc., indicate an acute inflammatory process. Neither do we consider cases in which the growth has reached such a size as to be appreciable to the patient. We are concerned, rather, with those conditions which, because of the slight local and general trouble occasioned by them, are apt to be overlooked.

The detection of tumors in Douglas' pouch by the bimanual method is an elementary procedure; the differential diagnosis belongs to higher education, in which no man ever attains more than the first degree. Rectal palpation should never be omitted; in young girls it alone is permissible. Fortunately, the information thus obtained is often conclusive. Having established the presence of an intrapelvic growth it remains to discover its probable origin, character (whether solid or fluid, cystic or purulent), relations, fixation to neighboring organs, and to draw some inference in regard to its rate of growth—all of which have a direct bearing upon the prognosis and treatment. If the result of the examination is not entirely satisfactory it should be repeated with the aid of anesthesia.

With recognition of an impacted pelvic tumor the question of treatment at once arises. Two points must be considered: the present comfort of the patient, and her future safety. With the first the size of the growth has little to do. A tender ovary, the size of a walnut, may cause greater distress than a fibroid the size of a grape-fruit. Pain then, constant, severe, aggravated at the menstrual period, and increasing in spite of local treatment, electricity, etc., is a sufficient indication for operative interference. Marked pressure-symptoms increasing in severity, so that life is rendered unbearable, furnish,

in connection with steady growth of the tumor, ample excuse for an operation. Add to this evidence of suppuration, accessibility to the vaginal fornix, etc., and it will be seen that many factors must be considered in a decision as to the proper course to be pursued.

I do not propose to renew the discussion of the relative advantages of the vaginal and abdominal route for the removal of small neoplasms situated in Douglas' pouch. There is always a strong temptation to resort to the former method, not only because the operation would appear to be easier and attended by less disturbance to the patient, but because she naturally shrinks from celiotomy if it can possibly be avoided. I doubt not that many of my hearers, like myself, have had occasion to regret the choice of the vaginal route. It is interesting to note that surgeons here and abroad who were the strongest advocates of this method of removal of all, or nearly all, intrapelvic tumors are rapidly shifting their position and limiting its application to cases in which there is ample room for manipulation, and good reason for apprehending the presence of pus or some infective material which it is desirable to keep out of the peritoneal cavity. It is now quite generally acknowledged that only an imperfect idea of the extent of pelvic adhesions can be obtained through a vaginal incision, and, moreover, that the conservative treatment of diseases of the adnexa, now so generally practised, can be carried out more thoroughly and intelligently when the entire field of operation is exposed to view. Since one can seldom determine before opening the abdomen the exact relation and extent of adhesions of the neoplasm which is firmly fixed in the cul-de-sac, it would seem wise (except under the conditions mentioned) to approach these growths by the abdominal route. Even when the small size of the tumor would seem to justify the choice of the vaginal route the decision in a given case is, of course, determined by the skill and experience of the individual operator; but the occasional operator will be on the safe side if he elects to open the abdomen in every case in which he proposes to extirpate a tumor. For the purpose of simple incision and drainage there is no difference of opinion regarding the propriety of operating *per vaginam*.

The enucleation of impacted intra- or extraperitoneal fibroids is often not only exceedingly difficult, but it is attended by a high degree of shock, even when the loss of blood is moderate. This leads us to a consideration of the treatment of impacted tumors complicating pregnancy. As I have already shown, these are especially dangerous because they commonly do not give rise to symptoms

which arrest the attention of an inexperienced observer, especially during the early months. In the case of the dermoid cyst to which I referred, as in those of two others seen with colleagues, the growth was either discovered during an ordinary perfunctory examination, or if known to exist before was recognized simply as a movable cystic ovary. This leads me to emphasize the importance of the routine examination of women during pregnancy, even though the *accoucheur* may have attended them on one or more previous occasions. This is insisted upon in all advanced text-books, but unfortunately, except by the specialist, is too infrequently practised. If it is regarded as a grave reproach to the physician who fails to discover a marked pelvic contraction until labor has well advanced, how shall one hold himself blameless when he does not discover an impacted pelvic tumor until parturition occurs, the patient having been under observation during several months?

With regard to the treatment of such growths before the seventh month of pregnancy, there is little room for difference of opinion. If repeated, careful attempts to dislodge the mass, with the patient in the knee-chest position (under anesthesia if necessary), are unsuccessful, the question of interference at once arises. Previous to the fourth month, or perhaps a couple of weeks later, the induction of abortion may be elected, though even this is fraught with some risk if a solid tumor encroaches to a marked degree upon the lower uterine segment. In a fatal case, which I saw in consultation, it had been impossible for a three-month's fetus to pass. After four or four and one-half months, in the interests of both the mother and child, I would insist upon the choice of celiotomy even when the tumor is small and accessible *per vaginam*. It is unnecessary to add that with our modern methods of operation and after-treatment the risk of interrupting the pregnancy is reduced to a minimum. Should premature delivery occur, as indicated by my experience, no harm results. I have never attacked an intrapelvic neoplasm by the vaginal route in a pregnant woman, through fear of hemorrhage, infection, and interruption of pregnancy by reason of the necessary traction which must be made upon the uterus, save in one instance, in which I opened the abdomen at the fourth month and found such firm and universal intestinal adhesions that I was obliged to close the incision and open a large ovarian abscess through the posterior vaginal fornix. Fortunately the uterus was not infected and pregnancy continued a month longer. The frequency with which dermoids become adherent in the cul-de-sac, and their liability to undergo degenerative changes renders it imperative that they

should not be allowed to be subjected too long to pressure by the growing uterus. If a patient is not seen before the seventh month, and there are no urgent symptoms, I would be inclined to temporize at least a month longer, in the interests of the child, and then perform celiotomy as before. The induction of labor, under these circumstances, offers little more chance for the child, and exposes the mother to practically the same risks as does labor at term. Celiotomy must eventually be performed even if it does not become an urgent necessity a day or two after delivery because of complications resulting from mechanical injury to the tissues.

The question of the proper treatment of impacted uterine fibroids during the early months of pregnancy was forcibly brought to my attention by a case recently seen in consultation. A tumor was recognized in the cul-de-sac as early as the third month, but was supposed to be ovarian. On opening the abdomen it was found to be a sessile, subserous fibroid. The patient was exceedingly anxious to have a child, so the idea of hysterectomy was not entertained. In order to check the growth of the fibroid, which then was not larger than an orange, the adnexa were removed. Unfortunately, the increased blood-supply incident to pregnancy caused the tumor to grow rapidly, so that when I saw the patient two months later there was no question as to the impossibility of delivering a living child *per vias naturales*. The choice accordingly lay between the immediate induction of labor and Cæsarean section near or at term. The latter proposition being rejected, there was nothing to do but to induce labor and deliver the immature fetus, which was effected with great difficulty and only after embryotomy. The woman is now, of course, without any hope of offspring. Should I have a similar case under my own care, I would either induce labor at the beginning of pregnancy and later deal with the tumor in as conservative a manner as possible, or, after opening the abdomen, perform a myomectomy if possible. Abortion doubtless would follow, but hemorrhage could be controlled, and subsequent conception would not be rendered impossible. Before undertaking such an operation, however, permission should be obtained to amputate the uterus if it is evident that there is no chance of safely removing the tumor, assuming that the idea of a Cæsarean section or Porro operation is not entertained.

The management of labor at term, when complicated by adherent pelvic tumors, is discussed in all text-books on obstetrics, and need not be reiterated here. The problem presented is purely a mechanical one, and, while the safety of the mother is paramount, such a method of procedure should be adopted,

if possible, that insures the delivery of a living child. If the tumor is cystic, and it is evident that the head cannot pass without a dangerous amount of compression, tapping is indicated, or even incising of the sac, with thorough disinfection. Some anxiety will naturally be felt for a few days subsequently, and the attendant should be prepared to perform celiotomy without delay if threatening symptoms develop. In the presence of a solid, impacted growth, the decision as to the proper method of operation will be governed by the size of the tumor, its locality, and the degree of encroachment upon the birth-canal. It should be remembered that thick-walled dermoids intimately attached to the uterus are commonly mistaken for fibroids.

The performance of celiotomy does not necessarily imply Cæsarean section or supravaginal amputation. It has been suggested (and successfully practised) to perform ovariectomy or myomectomy, then to close the abdomen and deliver the child *per vaginam*; but no fixed rules can be laid down, since each case must be left to the individual judgment of the attendant.

To summarize briefly: Impaction, and especially adhesion, of an intrapelvic tumor invests such a growth with an importance out of proportion to its size. The first indication of the condition may be the occurrence of certain pressure-symptoms referable to the rectum and bladder which are often erroneously referred to diseases of these viscera. Local pain, if present, is more or less constant, and is often of a neuralgic character. Such symptoms suggest the propriety of a careful examination. The prognosis and indications as to treatment are determined by a thorough appreciation of the size, character, and site of the tumor, and its attachment to adjacent organs. The possibility of pregnancy, with the added risks entailed, is always to be considered. The treatment is surgical, celiotomy being preferable except in the presence of suppuration. In early pregnancy there is a choice between removal of the tumor and the induction of abortion, with subsequent celiotomy. At a later stage the most heroic method is really the most conservative as regards both mother and child. If the tumor is first discovered during parturition, there is often no alternative but a prompt Cæsarean or Porro operation.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to \$180, will be made on July 14, 1898, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1898.

THE CLINICAL VALUE OF THE WIDAL TEST FOR ENTERIC FEVER.¹

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I HAVE gathered data regarding the Widal serum-test for the presence of typhoid fever from five of the larger New York hospitals; namely, from my own service and that of others of the visiting staff of the Presbyterian and Bellevue Hospitals, from the service of Dr. Frank W. Jackson at Roosevelt Hospital, from the service of Dr. A. A. Davis at St. Luke's Hospital, and from examinations made by Dr. George P. Biggs, Pathologist to the New York Hospital.

Altogether 503 cases have been analyzed, 157 being undoubted enteric fever. The tests in some few of these cases were made by the New York Health Board at the municipal laboratory; in other cases by the pathologist or other physician in the hospital in which they occurred; in every instance by experienced bacteriologists. In a large proportion of cases the blood was furnished to an examiner who had no previous knowledge of the patient, and the test was often witnessed and confirmed by others, so that any element of prejudice for or against its value may be eliminated. As for the manner of applying the tests, the extensive experience of those who made them leaves no room for criticism. Identical cultures and identical methods were employed simultaneously in those cases which responded and in those which did not. Both serum and blood were used, usually in proportions of 1-10, but in some instances, stronger, in others, weaker, the serum being obtained by means of a fly blister. Dr. Egbert Le Fevre, of the University Medical College division of Bellevue Hospital, employed twenty-four-hour cultures from stock tubes, grown in bouillon and agar. Dr. George A. Tuttle, of the Presbyterian Hospital, used cultures of bacilli transplanted at intervals of two to three weeks from which fresh cultures were grown in beef peptone bouillon for twenty-four hours in an incubator. For most of his tests he used dried blood dissolved in water, the dilution being 1-10 or 15. In some cases serum was employed. A large proportion of all the cases herein reported were tested more than once, many of them, especially the doubtful ones (or those in which clumping was observed without complete loss of motility), from three to five or more times. In general, the intensity of the reaction appeared to increase decidedly as the disease advanced, although

slight variations in degree were noticed from day to day by all observers,

One case, reported by Dr. Tuttle, gave no reaction upon the fifth, sixth, seventh, and eighth day of the disease, but did give a strong reaction during convalescence. Several cases without reaction when first tested, four days later were doubtful or suspicious, and four days later still, gave a good or strong reaction. Dr. Tuttle's table, compiled from cases at the Presbyterian Hospital, showing increase in intensity of the reaction as the disease progressed, is as follows:

Case.	Day of disease. Day of first test.	Reaction.	Day of second test.	Reaction.	Day of third test.	Reaction.	Day of fourth test.	Reaction.
1.	4th.	None.	8th.	Good.				
2.	7th.	Slight.	16th.	"				
3.	Doubt- ful.	Suspi- cious.	2 days later.	Suspi- cious.	4 days later.	Fair.	6 days later.	Good.
4.	"	"	1 day later.	"	"	"	"	"
5.	6th.	None.	10th.	Good.				
6.	Doubt- ful.	"	4 days later.	Fair.	14 days later.	Strong.		
7.	7th.	Suspi- cious.	11th.	Good.	21st.	Strong.		
8.	8th.	None.	10th.	Suspi- cious.	14th.	Fair.		
9.	9th.	Good.	16th.	Strong.				

No general difference in intensity of reaction is reported in cases occurring at different seasons of the year.

In answer to the question as to "how soon in individual specimens does the reaction appear, and how long does it last?" Dr. Tuttle replies as follows: "In a large majority of the specimens, the reaction is present as soon as the preparation can be placed under the microscope, and lasts indefinitely. In a few cases ten, fifteen, or thirty minutes may be required to develop the reaction. If there is no loss of motility of the bacilli at the end of fifteen minutes, no reaction is reported. If there is to be a reaction, decided loss of motility will be noticed within five minutes. Sometimes with the ordinary dilution of blood there will be immediate, absolute loss of motility without clustering. If the reaction is feeble, a considerable number of the bacilli may recover their motility after a varying length of time, two, three, or four hours, but when the reaction is strong they appear to be killed at once."

Following is a brief summary of the results obtained from the 503 patients with diseases of all kinds whose blood was tested:

1. Cases diagnosed clinically as typhoid fever, in which the tests were positive: 157.

¹ Read before the Section on Pathology and Bacteriology at the Sixty-fifth Annual Meeting of the British Medical Association, at Montreal, September 2, 1897.

2. Cases diagnosed clinically as undoubted typhoid fever, in which the test failed completely, 6. One of these was tested on the seventh day, and one on the eleventh. One was tested three times, and died of intestinal perforation the day following the last negative test.

3. Ratio of failures of the test in undoubted typhoid fever, 1:26, or nearly four per cent.

4. Cases diagnosed clinically as probable enteric fever, in which the test failed, 11. One of these subsequently developed inguinal adenitis.

5. If the failures in probable cases be added to those of undoubted cases of typhoid fever, the total ratio of failures of the test in typhoid fever rises to one in $9\frac{1}{4}$, or 10.8 per cent.—nearly eleven per cent.

6. Cases decisively diagnosed as other than typhoid fever, in which the test was positive, 20. In a few of these cases the test, though positive, was not considered strong enough to suggest a typical typhoid reaction.

7. Ratio of these misleading cases, as compared with the genuine ones, one in eight (nearly), or approximately, twelve per cent.

The diagnosis of some of these twenty cases was as follows: Carcinoma of pylorus; meningitis (variety?); nephritis and uremic coma (reaction excellent); appendicitis, with perforation (reaction excellent); chronic endocarditis (examined three times; Le Fevre); pneumonia (examined several times; failed after eighth day; Le Fevre); endometritis (moderate fever for ten days which subsided after curetting); suppurative subdeltoid bursitis (see below); acute bronchitis; pleurisy, with effusion (serum 1-10); diarrhea (blood 1-10); acute endocarditis (blood 1-10, feeble reaction); malarial fever (serum 1-10); malarial fever (serum 1-10); malarial fever (blood 1-10, reaction moderate on sixth day, absent on eighth day; Jackson); acute articular rheumatism; general miliary tuberculosis.

8. Cases diagnosed clinically as other than typhoid fever, and in which the test failed, as expected, 309.

I will not recite all the varieties of disease, numbering upwards of forty, in which the reaction has commonly failed, but the following examples will convey a fair idea of their diversity. They are furnished for the most part by Drs. Tuttle and Le Fevre. The latter for two months tested the blood of every patient admitted to the wards of the University Medical Division of Bellevue Hospital. His data were compiled for me by Dr. G. L. Wickes of the House Staff.

Malarial fever (tested during paroxysm; plasmodium present), 15; carcinoma, 18; pulmonary tuberculosis, 17; pleurisy, 7; pneumonia, 10; perito-

nitis, 3; rheumatism, 11; septicemia, 10; gonorrheal rheumatism, 7; chronic nephritis, 12; cardiac diseases, 14; *la grippe*, 4.

The Widal test is unquestionably ingenious and it constitutes a most instructive and suggestive bacteriologic demonstration, but is it more than this? Is it of genuine, practical diagnostic value to the clinician? The great majority, fully seventy-five or eighty per cent. of cases of typhoid fever need no confirmatory test beyond the plain history and symptoms, and the remainder, in which such a test if accurate and exclusive would be invaluable, are chiefly (1) cases of enteric fever seen very early in the course of the disease, principally in private practice; (2) cases of obscure sepsis; (3) severe or protracted cases of malarial remittent fever; (4) certain cases of typhus fever and of acute miliary tuberculosis; (5) various atypical forms of enteric fever.

I. I have inquired as to the earliest day of the disease at which the reaction has been distinctly observed in genuine cases of typhoid fever, with the following result: At the Presbyterian Hospital it has been found once on the fourth and once on the fifth day; at St. Luke's Hospital, once on the fifth and once on the sixth day; at New York, Roosevelt, and Bellevue Hospitals, each, once on the sixth day. (It is of course to be remembered that patients with this disease usually first present themselves at the hospital as late as from the eighth to tenth day.) It must be admitted that the reaction may be obtained toward the end of the first week, although the reported tests which would confirm an earlier diagnosis (those much oftener seen in private practice, at summer hotels, in institutions, and in course of epidemics) are few and uncertain.

Some interest attaches to the opposite extreme—the duration of the reaction during and after convalescence as a means of estimating the prolongation of immunity. Most of the hospital cases from which these statistics are derived soon disappear from observation after convalescence, and often, the reaction having been once obtained, it is not sought again. Thus, at St. Luke's Hospital, the last day of the reaction in any case reported is the thirtieth, at Roosevelt Hospital the forty-fourth, and at Bellevue Hospital the forty-fifth day, with earlier cases on the fortieth and forty-second day. Dr. Tuttle assures me that he has found it four and six months after the occurrence of the disease, and several times at the end of a year, and in the case of my own blood, which he tested for me, the reaction was decided four years after I had had the fever. Another case has been reported to me, occurring in private practice, in which the reaction was present eight years after the illness. It is difficult to believe in these extreme cases, that

the presence of the reaction is more than mere coincidence, again demonstrating its uncertainty.

Further examination should be made in this direction, for if the reaction is shown to be again obtainable after a period of immunity, a subsequent disease might occur and be wrongly diagnosed as enteric fever.

Dr. J. W. Brannan¹ succeeded in obtaining the reaction from dried blood which had been kept for four and seven weeks, respectively, and clinical experience favors the belief that immunity after enteric fever is lasting, except in rare instances.

II. In septicemia, with obscure pus foci one is often perplexed to differentiate the disease from enteric fever; and again, a severe septic infection may mark an existing enteric fever. There is a very troublesome class of cases in which certain typical symptoms of enteric fever, such as the eruption and intestinal hemorrhage, are wanting, as well as any ascertainable evidence of a pus focus. Yet the temperature and other symptoms suggest enteric fever, rather than septicemia, and pus may be discoverable only after protracted illness. It is in just such cases that the test proves unreliable, if not positively misleading. Two cases from my own service will illustrate:

The first is that of a man whom I suspected of having had typhoid fever for a fortnight. He had typical temperature and some abdominal pain. The Widal test was negative. The symptoms then became locally distinct, and a diagnosis of subphrenic abscess was confirmed by operation. Reliance upon the Widal test in this case would have been justified, yet in the second case it was wholly misleading. A young man presented typical symptoms of enteric fever for a fortnight, but without eruption or hemorrhage. The Widal reaction was very positive. He had a painless swelling over the right shoulder which he declared had existed for many months, and which in no wise troubled him. However, I aspirated the swelling, suspecting pus, and after an extensive suppurative deltoid bursitis was subsequently evacuated the temperature immediately fell to normal and the patient promptly recovered.

Reliance upon the Widal test in this case would have led to a continuation of the treatment for typhoid fever until the patient became perhaps hopelessly septic.

III. In the diagnosis of typhoid from malarial fevers of remittent type we possess a vastly more reliable test in the demonstration of the plasmodium malariae, and the uncertainties of the serum test are illustrated by the preceding data, in which it was negative in fourteen cases during the paroxysm, in which the

plasmodium was found, and at the same time was positive in three other cases.

IV. The complete failure of the test in differentiating between typhus and typhoid fever is shown by the case above quoted from Dr. Le Levre, in which the presence of a purpuric eruption with temperature led to the suspicion of typhus fever, and consequent isolation, of the patient. The serum test failed, but the subsequent course of the case proved it to be unquestionably typhoid and not typhus fever. The failure in differentiating between typhoid fever and acute miliary tuberculosis is illustrated by a case cited above.

Conclusions.—From the foregoing brief study of 503 cases of all kinds in which the Widal test was applied, the following conclusions may be drawn:

1. While the test is positive in the large majority of cases of enteric fever, and negative in the greater number of other diseases, there is a margin of error of eleven to twelve per cent. on each side of what might be called the normal line, between cases in which the test fails where it ought to succeed and succeeds where it ought to fail, in order to make it of real clinical value.

2. This total of twenty-three per cent. of possible error includes unfortunately just those cases in which there is the greater doubt upon the purely clinical side.

3. As a genuine diagnostic aid the test has about the value of the Diazo reaction in typhoid urine, or the study of leucocytosis in pneumonia; that is, it is confirmatory in connection with appropriate symptoms but misleading if positive reliance be placed upon it.

4. The fact that an expert bacteriologist is required to make the test is offset by the ease of transportation of specimens of dried blood which long retain the power of reaction, and it is greatly to be hoped that further possible improvement in technic may place this most ingenious test upon a firmer practical basis than can at present be claimed for it.

EUROPEAN METHODS IN THE PRODUCTION OF ANTITOXIN AND VACCINE.¹

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INSPECTION of the most important laboratories of Germany, France, Austria, and Great Britain reveals the fact that the methods in use for the production of diphtheria antitoxic serum and vaccine are much the same everywhere, and these methods have been published so often that comment is unnecessary. The chief interest in what I have to report lies in the comparison between the methods and

¹ "Sero-diagnosis of Typhoid Fever," *New York Med. Jour.*, March 27, 1897.

¹ Abstract of a Report to the Michigan State Board of Health.

results of our own country and those of Europe. In Germany any one may manufacture antitoxin, but before it is allowed to be sold it must be tested by a government official. For this purpose there is in Berlin a small laboratory in charge of Professor Ehrlich, which is the government's control or testing-station. The actual testing is done by Ehrlich's assistants. Dr. Banhoff, who was in charge of the station at the time of my visit, was very kind in showing and explaining their methods.

By far the larger part of the serum used in Germany is produced by Farbwerke, chemical manufacturer (formerly Meister, Lucius & Brünig), at Höchst, near Frankfort. This is known as the Behring serum. Professor Behring lives at Marburg, but occasionally visits the laboratory at Höchst. The laboratory, stables, and equipment are good, and well planned for the purpose. After preparation the serum is turned over to an official who takes a sample from each lot, and forwards it to the control station at Berlin. The bottling and labeling of the serum is under this official's direction. The government control or testing-station is soon to be moved from Berlin to Frankfort, in order to be near this laboratory. Another chemical firm, *Chemische Fabrik auf Actien* (formerly E. Schering) of Berlin, also manufactures antitoxin. The records of the control station showed, at the time of my visit, that during the three years following the introduction of antitoxin, the Schering laboratories had only had ninety-four lots of serum tested. A still smaller quantity is produced by a firm in Hamburg.

At the control station each sample of serum is tested: (1) for strength or number of antitoxic units; (2) a relatively large amount is injected into a white mouse, to see if there is a possibility of poisoning from the preservative added; (3) cultures are made to determine whether or not bacteria are present. A sample of the serum is preserved, and if it is thought advisable it is retested every few months to see if its strength is retained. I was rather surprised to learn that ordinarily only one guinea-pig is used in determining as to whether the serum was of the strength claimed or not. Should this one test, however, fall below the claims of the manufacturer, the serum is then carefully tested by two assistants working separately and checking each other's work. It has been recognized for some time by every competent observer that our tests are very unsatisfactory and unreliable. One bacteriologist would report that a given serum contained only a half or a third the number of units which another had found. Several months ago I had a bottle of serum divided into four equal parts. One of them was sent to a bacteriologist at Ann Arbor, another to Detroit, another to Philadelphia, and the

fourth to New York, with requests for an accurate test of the number of antitoxic units in each cubic centimeter. Every one of the bacteriologists to whom this serum was sent has had large experience in testing antitoxin. The reports made were as follows: (a) 150 units per c.c.; (b) 175 units per c.c.; (c) 100 units per c.c.; (d) 250 units per c.c. There is, however, nothing strange in such variations, if we remember that the foundation of the test is the strength of the toxin, or in other words the lethal dose of a poison. My colleague, Dr. Houghton, supplies me with the following data bearing upon this point:

No. of Guinea-pigs.	Weight, Grams.	Quantity of Toxin Injected.	Result.
1	285	.05 c.c.	Died in 48 hours.
2	268	.03 "	Died in 48 hours.
3	551	.024 "	Died in 72 hours.
4	491	.02 "	Died in 72 hours.
5	560	.018 "	Lived.
6	475	.015 "	Lived.
7	406	.015 "	Died in 72 hours.
8	280	.01 "	Lived.
9	285	.01 "	Lived.
10	330	.01 "	Lived.
11	325	.01 "	Died in 18 days.
12	280	.01 "	Died in 3 days.
13	250	.01 "	Lived.
14	250	.01 "	Lived.
15	264	.01 "	Died in 10 days.
16	300	.009 "	Died in 70 hours.
17	294	.008 "	Died in 40 hours.
18	270	.008 "	Died in 4 days.
19	290	.008 "	Died in 48 hours.
20	270	.008 "	Died in 90 hours.
21	245	.008 "	Died in 30 hours.
22	240	.008 "	Died in 40 hours.
23	252	.008 "	Lived.
24	250	.008 "	Died in 5 days.
25	265	.008 "	Lived.
26	256	.008 "	Lived.
27	265	.008 "	Lived.
28	255	.007 "	Died in 4 days.
29	250	.006 "	Died in 4 days.
30	250	.006 "	Lived.
31	247	.006 "	Died in 7 days.
32	294	.006 "	Died in 8 days.
33	255	.005 "	Lived.
34	295	.005 "	Died in 3 days.
35	276	.005 "	Lived.
36	286	.005 "	Died in 8 days.
37	298	.005 "	Lived.
38	252	.004 "	Died in 4 days.
39	302	.004 "	Lived.
40	287	.004 "	Lived.
41	276	.004 "	Died in 12 days.
42	268	.004 "	Lived.
43	226	.0025 "	Lived.
44	245	.001 "	Lived.

Examining the results obtained from the injection of pigs of approximately the same size (250 to 300 grams), we find that the smallest quantity of poison proving fatal was .004 gram. (see pigs Nos. 38 and 41). The next smallest quantity was .005 gram. (see pigs Nos. 34 and 36). The largest quantity injected which did not cause death was .01 gram. A marked difference is noted in the reaction of pigs which were injected on the same day, *e.g.*, No. 14, which weighed less than No. 41, yet remained alive

after receiving two and one-half times as much poison as the latter, which died in twelve days. The difference in time required for the same amount of poison to prove fatal is also very great, *e.g.*, No. 38 and 41, also No. 17 and 24, etc.

One might conclude from the results of the injections (pigs No. 17 and 27) that .008 cubic centimeter was approximately the minimum fatal dose of the poison, while if the conclusion were arrived at from an examination of the whole table, .04 cubic centimeter or .05 cubic centimeter would be the quantity chosen, although one dose is nearly twice as great as the other.

What the result might be if the one factor or the other were used in standardizing an antitoxin may be gathered from the following tables, giving experiments especially made to determine this point :

SERUM I.

No. of Guinea-pigs.	Weight.	Quantity of Toxin Injected	Quantity of Serum Injected.	Result.
1	255 gms.	.08 c.c. No. 79	.002 c.c.	Remained alive.
2	279 "	.08 " "	.001 "	Died in 40 hrs.
3	265 "	.08 " "	.00066 "	Died in 40 hrs.
4	287 "	.08 " "	.0005 "	Died in about 40 hrs.
5	265 "	.08 " "	.0004 "	Died in 36 hrs.
6	252 "	.08 " "	.00066 "	Died in 36 hrs.
7	294 "	.08 " "	.002 "	Remained alive.
8	280 "	.08 " "	.001 "	Died in 48 hrs.
9	252 "	.08 " "	.00066 "	Died in 40 hrs.
10	285 "	.08 " "	.0005 "	Died in 40 hrs.
11	254 "	.08 " "	.004 "	Died in 36 hrs.
12	250 "	.08 " "	.00033 "	Died in 40 hrs.
13	270 "	.05 " "	.001 "	Remained alive.
14	252 "	.05 " "	.0005 "	Remained alive.
15	307 "	.06 " "	.00033 "	Remained alive.
16	280 "	.05 " "	.001 "	Remained alive.
17	275 "	.05 " "	.0005 "	Remained alive.
18	292 "	.055 " "	.00033 "	Remained alive.

SERUM II.

No. of Guinea-pigs.	Weight.	Quantity of Toxin Injected	Quantity of Serum Injected.	Results.
1	300 gms.	.08 c.c. No. 79	.00033 c.c.	Died in 48 hrs.
2	287 "	.09 " "	.00033 "	Died in 48 hrs.
3	265 "	.1 " "	.00033 "	Remained alive.
4	300 "	.09 " "	.0005 "	Died in about 48 hrs.
5	350 "	.1 " "	.00066 "	Remained alive.
6	320 "	.095 " "	.002 "	Died in 55 hrs.
7	280 "	.08 " "	.00066 "	Died in 36 hrs.
8	270 "	.08 " "	.001 "	Died in 30 hrs.
9	312 "	.06 " "	.001 "	Remained alive.
10	262 "	.05 " "	.0005 "	Remained alive.
11	287 "	.05 " "	.00033 "	Remained alive.
12	252 "	.05 " "	.001 "	Remained alive.
13	260 "	.05 " "	.0005 "	Remained alive.
14	282 "	.05 " "	.00033 "	Died in 9 days.

The same toxin was used and the same method of injection employed in the experiments detailed with serum I. and II. The serum tested was from different horses. If 8 mg. is taken as the minimum fatal dose of toxin, and ten times this quantity used in testing the serums, both would be condemned as very weak, while

if 5 mg. were taken both samples would show a strength of approximately 300 units to each cubic centimeter. It is not necessary to comment on the importance of the difference between the results obtained from the use of the one factor or the other in determining the strength of a given sample of serum, as it is evident that such variations in the results as are obtained from a careful application of the test *may* be the cause of a great discrepancy if compared with subsequent tests. A given serum might be made to appear nearly worthless, or much better than it is claimed to be. Comparing the results of single injections, some marked variations appear. Thus, in the last table, pig No. 3 was smaller than pig No. 6, yet remained alive after receiving a larger dose of the toxin and one-sixth as much antitoxin as the latter animal, which died in fifty-five hours.

I was glad to note that at the Berlin control station they have had the same experience, and finally concluded that the test was wholly unsatisfactory and abandoned it, or rather modified it. The modified test, they claim, gives much more uniform results. I am having some careful comparisons made between the old and the new method of testing and will report the results at a later date.

During the past year the manufacturers of antitoxin have vied with each other in producing high-potency serums; *i.e.*, those which contain a large number of antitoxic units in a small bulk of fluid. Two years ago the best serum to be had contained, as a rule, 100 units per cubic centimeter; during the past year, however, much of the serum used was said to contain 500 or more units per cubic centimeter. This meant, of course, that the amount of serum to be injected was reduced to one-fifth the former bulk—a very manifest improvement. It has been noted by those giving close attention to the matter that high-potency serums rapidly decrease in antitoxic power. I learned that this observation is confirmed by the German authorities. At the government station they told me that all the high-potency serums very soon lost a considerable portion of their antitoxic power. At the Behring laboratory they confirmed this and stated that they had ceased marketing any antitoxin of over 250 units per cubic centimeter. Unfortunate though it may seem to be, we must, for the present at least, return to the use of much larger quantities of antitoxin, if we want to be sure that we have a product which will retain its potency for a reasonable time.

It still remains for some investigator to devise a method for concentrating antitoxin, such that the volume of liquid to be injected will be small, and the serum will retain its potency indefinitely. Many comments have been made in the medical press on a dry serum of this kind (Behring's preparation). But

at the control station I was told that none of this material had been offered for testing, while the director of the Behring laboratory commented unfavorably upon the product. It is easy enough to produce a dry or precipitated antitoxin which will show a very high potency. But these dry serums dissolve very incompletely and the bulk of liquid after dissolving is at least as great as that of the original serum.

I found that the dosage, or number of antitoxic units, used in Germany and Austria is lower than in this country. Dr. Ganghofner, of the University of Prague, has lately published a seventy-page supplement to the "Handbuch der Speciellen Therapie inner Krankheiten" on the serum treatment of diphtheria. This is an admirable summary of the theories, methods, and results of this treatment. He says: "I am in the habit of administering in recent cases of one- and two-days' standing 600 antitoxic units (Behring's simple curative dose). When the children are more than ten years of age I give 1000 antitoxic units, even in the milder cases. The injection is repeated in accordance with the course of the disease, often a single dose sufficing. If, however, symptoms of laryngeal affection are observed, or if the case is in a more advanced stage, under all circumstances, and even in small children, an injection of 1000 antitoxic units is given at once, and it is usually repeated before the lapse of the next twenty-four hours; often after twelve, or even after six hours; finally, a third injection is given. I have rarely exceeded a total quantity of 2000 to 3000 antitoxic units."

It should be said, however, that a few men in Germany recommend larger doses. In France it appears that large doses of a relatively weak serum are used. In England the tendency seems to be toward large doses.

The results of treatment have been often published, and I need refer to them but briefly. On the whole the results obtained on the Continent are excellent, while in Great Britain they are relatively poor. But the most striking results yet obtained are those reported from our own country. The reduction in mortality, as shown by the health reports of cities like Detroit, New York, and Chicago, as well as those of the American Pediatric Society, have not been equalled in Europe. This shows that we have had good antitoxin. Ever since antitoxin was introduced I have periodically examined samples of all the serums made in this country and all that were obtainable from Europe, and while there have been many variations, the serum made in this country, with one exception, has been uniformly good. The results show that it has been skilfully used.

In regard to vaccine, I may say that I did not give so much attention to this subject, although visiting a number of places where it was produced. The tendency everywhere in Europe is to use the liquid vaccine. As is generally known, the "bad arms" that follow vaccination are for the most part due to pus-producing bacteria which are inoculated along with the vaccine. Thus far no one has succeeded in producing an aseptic vaccine on points, while it is possible to produce a germ-free liquid vaccine. This has the additional advantage that it preserves the potency of the virus much longer than the dry point. There is no question but that vaccination should be an aseptic surgical operation, using an aseptic vaccine. I was told in Vienna, at the vaccine station where many thousands are annually vaccinated with fluid vaccine, that "bad arms" are practically unknown. While in Great Britain I noticed the reports of a number of trials of parents who refused to allow their children to be vaccinated. The cause given for the refusal was always that some child had been made seriously ill and its life endangered as a result of vaccination. As before said, these bad results are due to impure vaccine, or lack of care on the part of the operator.

NOTE. Since writing the above paper I have received a copy of Ehrlich's article, entitled: "*Die Werthbemessung des Diphtheriaheilserums und deren Theoretische Grundlagen.*" This is a detailed study of the whole question of antitoxin-testing, the nature of toxins, etc. Ehrlich also points out the great variations which may be obtained in testing the toxicity of any given toxin. In his new test he uses as a starting-point a dry serum of carefully ascertained power, which is preserved under very favorable conditions. The details of his method are too numerous to give here. He claims, however, that with it an almost chemic accuracy may be obtained. It is earnestly to be hoped that this will prove true.

WHAT CONDITIONS INFLUENCE THE COURSE OF SYPHILIS?¹

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(Continued from page 520.)

SYPHILIS in healthy persons, male and female, as a rule, runs a mild course, and its poison is eliminated from the system if active treatment is instituted at the proper time. Much depends upon the intelligence and docility of the patient, who, if he enjoys ordinary good health and will follow up energetically,

¹ An address read at the Twenty-first Annual Meeting of the American Dermatological Association, Washington, D. C., May 6, 1897.

but very carefully directed treatment, may, I am confident, be cured. This comforting assurance may be given to the majority of patients seen in private practice, who, in general, are intelligent, realize the gravity of their condition, and resolve to so conduct themselves and regulate their habits that their vital processes can resist the depressing influences of the syphilitic poison and be able to undergo the strain put upon them by long-continued medication. Thirty-years' study and observation of the nature and treatment of syphilis has convinced me that in most cases a cure is possible, whereas, in years gone by, we groped in ignorance, pursued faulty, and even harmful, therapeutic methods, and never felt ourselves masters of this insidious and far-reaching infection. The scope of this essay will not admit of the full consideration of the treatment of syphilis, but in view of the fact that the cure of the disease absolutely depends upon a well-regulated course of therapeutics, it is germane to the subject to briefly outline the essential points. The disease should be attacked as soon as the secondary manifestations show themselves. Then a rational and vigorous treatment should be begun and persisted in for five or six months, at the expiration of which time a cessation of medication may be allowed for two or three weeks.

In the very early days of the secondary stage insoluble mercurials may be used in pill form (protiodid, salicylate, tannate, or thymolo-acetate), but it is always best to begin inunction treatment as early as possible and to follow it up vigorously. The patient should be carefully watched and all good influences brought to aid his digestive, and stimulate his vital processes. When rendered necessary by the poisonous features of the disease, the use of iodid of potassium should be resorted to, but the main reliance will be placed upon the mercurials in inunction form, by injections, and perhaps by fumigations. Vigorous and intelligent treatment more or less promptly influences and attenuates the virulent infection, which will gradually subside, and in most cases in previously healthy persons a cure will result within two or three years, and in some cases much sooner. The mercury destroys the newly formed and nascent cells, and as they die so does their poisonous power wane. In many cases we see no visible lesions or very simple ones after the first rash. Cases thus treated may be called mild, and in private practice it is the rule, when patients are intelligent and docile, and submit fully to treatment, to see this benign course of syphilis. Such cases may, therefore, be taken as the standard of comparison with other forms of syphilis now to be considered.

There are many persons who, though not abso-

lutely sick, are not really well. In this category are included cases of anemia, flabby and poorly nourished individuals, blonds with light reddish hair, persons suffering with malnutrition, and even those who are mildly neurasthenic. Then again, we observe cases in which the health is impaired by worry and grief, by business cares, doubts, dreads, and excitements, also by insomnia. All such may be said to suffer from lowered vitality, and in them syphilis is apt to run a more or less severe course. In the treatment of these cases we may not experience the quick response to the administration of mercurials; the manifestations may be rather slow in disappearing, and others may show a tendency to reappear. The cure, therefore, is not produced quite as quickly as in the benign cases, but although the case may hitch and halt, neither physician nor patient should falter. In America, syphilis in women runs about the same course that it does in men, but the female sex is much less frequently attacked by cerebral and cerebrospinal affections than are men. Women as a rule are less addicted to alcoholics than males, and they are not called upon to overtax the brain as many men are, consequently they present rather infrequently evidences of specific nervous affections.

Syphilis in the poor and ignorant is mild or severe, and sometimes malignant in its course. Perhaps the greatest of all drawbacks in the treatment of syphilis in the poor is to establish in their minds a realizing sense of the gravity of the affection. Consequently, it is in these individuals that we so often see the disease run a chronic and severe course. They are careless in following treatment, and as a rule cannot be induced to remain under medical care any length of time after the disappearance of their specific lesions or the cessation of the discomforts. This is the keynote to the severity and malignancy of syphilis among the lower orders of our population. Then again, many poor people are addicted to alcoholics which act harmfully upon them and render the course of syphilis severe and protracted. In this class of patients the food is very commonly inadequate in quantity, of poor quality, and among many (Italians, Poles, and Hebrews) fish and the starchy articles are eaten and very little, if any, animal food is used. The nutrition of these people is, usually below par, and few of them possess that systemic resistance which holds them up when in the grip of syphilis. Then again, they are other factors which tend to render syphilis severe in the lower classes. They are commonly uncleanly, and as a result the microbes of the skin act upon syphilitic lesions and induce in them ulceration and perhaps phagedena and gangrene. While in private practice it is very rare to see pustular eruptions, in the lower classes these lesions are

very common. Then again, uncleanness leads to the development of mucous patches and condylomata lata upon the vulva, anus, axillæ, umbilicus, and upon other parts, and these lesions aggravate and lengthen the course of the disease.

Severe forms of syphilis are observed in varying grades of intensity. As a rule, the secondary lesions are numerous and distributed symmetrically over the whole body, and the influence of the specific poison is severe (neuralgias, headaches, joint bone, and muscular pains, etc.). One rash runs an indolent course and is soon followed by one of more severity which becomes complicated with pyogenic infection, and thus we come to see ecthyma, impetigo, and variolaform syphilides and rupia. In these cases there is more or less prostration and little reparative tendency, while in very severe cases fever, sometimes head symptoms, great emaciation, and even marasmus may exist. Then again, in unhealthy persons, particularly in the lower orders, we may observe what is called precocious malignant syphilis, which is an entirely different condition from true malignant syphilis. Precocious malignant syphilis is noteworthy for the reason that it usually begins in the severer forms of the disease in which ulceration attacks the various lesions. Then while these degenerating secondary lesions are appearing, ulcerating, and cicatrizing, and old are being replaced by new lesions, gummatous infiltration, of the mouth, eye, subcutaneous tissues, bones, and joints, and the cerebro-spinal system, may develop more or less extensively. Thus we see men covered with secondary lesions in whom tertiary lesions have appeared precociously, while at the same time the health is at a very low ebb, and there may be present aphasia, hemiplegia, coma, and other nervous disturbances. Such briefly is precocious malignant syphilis. In these cases, as a rule, want of treatment or imperfect treatment and impaired resistance to the virus, are the underlying causes of the serious course of the disease.

Malignant syphilis is undoubtedly, as claimed by Neisser, a rare and peculiar form of the infection. Its chief characteristic is that it is essentially a secondary condition and is in no way associated with tertiary syphilis. Patients thus afflicted show evidence of profound systemic poisoning in the high fever, loss of flesh, abject marasmus, insomnia, and pains in various parts of the body. There also may be present such grave symptoms as aphasia, epilepsy, coma, and paralyses. In these cases the nervous affections are not due to gummatous deposit, but rather to the round-cell infiltration around the vessels, chiefly of the membranes of the brain. The cutaneous lesions are at first erythematous and papular, with the general disposition, arrangement, multiplicity,

etc., peculiar to the secondary period and without the localization and comparative sparseness of the lesions as observed in precocious malignant syphilis. These early manifestations very soon undergo degeneration and as a result goodly sized ulcers, rupia, large ulcerated plaques, and even gangrenous surfaces are produced. None of these lesions, except the rupia, resemble in their course tertiary syphilitic ulcers with their peculiar mode of increase and with their occasional tendency to become serpiginous. Malignant syphilis usually begins early in the secondary period, and very uncommonly later than the end of the first year of infection. This form of syphilis is very rare indeed, and in it a fatal issue is often observed. Its course may be protracted so that a year may elapse before death occurs or a cure is affected. Malignant syphilis is due to the lack of resistance on the part of the individual to the severity of the infection. It seems that the poison meets in the tissues of the person attacked such a condition of receptivity that it is generated in large quantity and with a peculiar virulence which affects the whole organism.

In some cases there is evidence of impaired nutrition in persons thus attacked, but it is sometimes surprising to observe malignant syphilis in very strong and robust subjects of good habits. It seems that in spite of the vigor of their health these patients lack that something which constitutes what we term partial immunity to the syphilitic virus. In short, their tissues present fertile culture-grounds for the exuberant growth of the syphilitic infection and the poison is produced in large quantities, while the cellular elements are much more sparsely proliferated.

The persistence of the syphilitic infection beyond the secondary period results in the production of a certain morbid state, the evolution of which is slow, uncertain, and often insidious, and the lesions of which are deeply seated in the subdermal connective tissue, mucous membranes, and other structures, and which is called tertiary syphilis. By far the most potent cause of tertiary syphilis is absence or insufficiency of treatment in the secondary stage. But in addition to this cause there are others which result from lowered nutrition and weak resistance on the part of the tissues, as we have already seen. Then, again, certain diseased conditions, yet to be considered, may act as secondary factors in the development of this late and erratic stage of syphilis. No systematic description of this morbid state can be given, and the best that can be done in this direction is to sketch the more frequent and striking types of what the French term *tertiarism*. In some cases we see the serpiginous syphilide, which is merely an indication of a persistent tendency of the skin to

undergo chronic creeping ulceration produced by pyogenic microbes. In many of these cases the patients seem perfectly well, and the only morbid condition remaining is this vulnerability of the skin. In some cases there may be more or less severe cachexia. Another form of tertiary infection shows itself in ulcerating tubercles of the skin and subcutaneous tissues, which usually appear during the third or fourth year and then recur by persistent but interrupted attacks extending over very many years and over many portions of the body. In these cases a morbid condition has been engrafted upon the skin early in the infection, which may persist for many years, and in some instances is never cured. Still another form of tertiary syphilis is seen in the development of large tubercles in the skin, which are dry and scaling, run an indolent course, and successively attack all portions of the integument. In many of the cases included in the last two categories there may be visceral or cerebrospinal complications. The development of subcutaneous gummata is one of the most common evidences of tertiary syphilis. These deeply seated infiltrations may attack in succession all parts of the body at longer or shorter intervals and occupy many years in their slow and aphlegmatic course. In some cases of late gummata the health is not materially affected, in others more or less severe cachexia is present. In these cases visceral, nasal, pharyngeal, laryngeal, tracheal, and cerebrospinal gummata may also coexist or alternate irregularly with the cutaneous manifestations. Then, again, sometimes cases are observed in which bone- and joint-lesions attack successively many of these structures and cause severe and continued pain. In these cases it is not uncommon to observe well-marked cachexia and perhaps brain symptoms. Tertiary syphilis may follow a mild or a severe and protracted secondary stage, or it may develop in subjects who have no knowledge whatever of the primary and secondary periods. Many tertiary lesions yield readily to treatment, but they are frequently followed by others. In some cases tertiary cachexia much prolongs the course of the disease.

One of the most formidable complications of syphilis is tuberculosis, and it is only too clearly proven that tissues attacked by syphilis become perfect hotbeds for the fructification of the tubercle bacillus. This destructive and deadly symbiosis is seen in the secondary and in the tertiary periods. In early secondary syphilis, even when well treated and in seemingly healthy subjects, bronchitis or pneumonia may develop and upon them acute miliary tuberculosis may supervene and carry off the patient. Then, again, when syphilis runs a severe course, in some truly malignant cases, tuberculosis supervenes and

quickly kills the patient. We also sometimes see men and women who are being properly treated and who towards the end of the first year of infection begin to lose weight and strength, and are attacked by pulmonary symptoms. Some of these cases are benefited and cured by change of climate and treatment, but many are promptly carried off by this virulent tuberculous complication. Gummatous infiltrations of any or all of the viscera are liable to be attacked by tuberculosis, and syphilitic sarcocele is not infrequently the seat of this second invasion. When considering the factors of gravity in syphilis, we unfortunately must accord to tuberculous infection a prominent place. Chronic alcoholism is a powerful factor in inducing the development of severe and extensive lesions of the skin and mucous membranes, of cerebral disorders, of a debilitated condition of health, and causes the disease to run into its tertiary stage. It is then very chronic and visceral lesions are of frequent occurrence, and deeply seated infiltrations of the skin and mucous membranes develop, which show a marked tendency to soften and form abscesses and ulcers of great persistency. Alcoholism in the lower classes is, next in order to the absence of treatment, the most frequent cause of tertiary syphilis. When arterial or visceral degeneration has not been produced and with the cessation of the alcoholic habit, much encouragement may be given to such patients as to their ultimate cure, provided they will abstain from alcohol and systematically follow the treatment.

In malarial subjects the course of the disease is frequently severe, the condition of ill health is well-marked, neuralgias are very frequent and the specific lesions are copious and extensively distributed. Bright's disease is a factor of much gravity in patients also infected with syphilis, and in many cases its course is very severe. Then again, we sometimes see men and women who have advanced kidney degeneration in whom syphilis runs a surprisingly mild course. Diabetic subjects who contract syphilis are very commonly profoundly influenced by the infective process. Their lesions are extensive and show a tendency to ulceration, and the general depression of health is very marked. When in the course of syphilis specific brain lesions lead to glycosuria or diabetes insipidus, these grave constitutional conditions become factors in the production of a general breakdown of the system. The various morbid blood states, such as scurvy, the hemorrhagic diathesis and hemoglobinuria, are serious complications of syphilitic infection, and in patients suffering from them it is common to observe a severe course of the disease. Influenza is frequently seen to be the cause of great systemic depression, and it may become a factor of

much gravity in syphilitic patients, in some of whom severe pulmonary affections occur. Rheumatism and gout are not uncommon complications of serious import in syphilitic patients, in some of whom the specific lesions are materially modified by this harmful symbiosis. The debility following various infective processes, such as typhoid fever, diphtheria, erysipelas, and the exanthemata sometimes renders the course of syphilis severe for a long or short period. I have, however, in some cases, been astonished at the extreme mildness of secondary syphilis in patients who had a short time before infection recovered from erysipelas, typhoid fever or diphtheria. Cancer sometimes attacks epithelial hyperplasia in late syphilis (mouth and anus), and ultimately causes death.

When it is remembered that syphilis expends its morbid action largely and extensively upon the blood-vessels, the fact strikes one that in old persons the severity of the attack is very much influenced by the condition of the vascular system. Upon the integrity of the patient's blood-vessels, therefore, hinges in a large degree the greater or less severity of syphilis. In old persons arteriosclerosis is common, and may involve more or less of the circulatory apparatus. Instances of this involvement combined with syphilis are not at all uncommon. Besides vessel changes, visceral lesions, general debility, an unstable condition of the tissues, and the systemic morbid effects produced by vicious habits and indulgences, are undoubtedly factors of gravity in syphilis of advanced life. A review of my own clinical experience has convinced me that in many elderly persons of vigorous physique and good habits syphilis runs a comparatively mild course; in less vigorous persons it is more severe; but that in poorly nourished, weakly, and underweight individuals, in the nervous, excitable, neuropathic, and over-studious (brain-workers from all classes) it is often severe and even disastrous in its effects. Further, I have observed the malignant combination of arteriosclerosis and syphilis, and the grave effects of antecedent visceral disease.

Early and efficient treatment, however, is most essential, and by it the course of the disease in the aged may be much modified, may be rendered mild, and in many cases a cure may result.

Kangaroo Tendon and the Dingley Bill.—The appraisers of the Custom House are in a tangle as to how to classify kangaroo tendon in order to fix the duty upon this valuable material. In the attempt to bring it into the country under a low rate of duty, the importers designate kangaroo tendon as "animal integument." But whether the kangaroo's integument includes his tendons is too profound a question for the officials.

CLINICAL MEMORANDUM.

A CASE OF VERY LARGE THORACIC ANEURISM.

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VISITING PHYSICIAN TO BELLEVUE HOSPITAL; CONSULTING
PHYSICIAN TO GOUVERNEUR HOSPITAL AND
HOSPITAL FOR RUPTURED AND
CRIPPLED.

THE case was that of a colored man, aged forty-three years, a waiter by occupation. He was admitted to Bellevue Hospital, January 30, 1891. He gave a history of syphilis occurring twenty years before. One year previous to admission to the hospital he began to have pain in the right upper sternal region on coughing or swallowing. At

FIG. 1.



External appearance of aneurismal tumor.

this time there was no change in the voice. The pain continued with varying intensity, usually being worse at night. About two months before admission he noticed a slight and painful elevation near the sternoclavicular articulation, which gradually increased in size and constantly became more painful. Shortly after this, the pain, which was of a gnawing character, often radiating down the back and right arm, became so intense that he was obliged to stop work. He consulted a physician who told him that the tumor was an abscess, advised him to apply a poultice and return within two days, when it could be opened. The enlargement was peculiar in shape, presenting the appearance of a diminutive haystack. Had it been incised, as proposed, it undoubtedly would have been very unpleasant for the physician, but would have saved the patient much subsequent suffering. On exam-

ination he was found to be well nourished and of good muscular development. There was great dyspnea on exertion.

A diagnosis of aortic aneurism was made, and it was thought to involve the vessel at the junction of the ascending with the transverse arch. The heart was enlarged and displaced, the apex beat being at the sixth left intercostal space, and in line with the nipple. At this time the growth, externally, seemed to be about the size of a

FIG. 2.



Profile view of the same tumor as above.

walnut. It constantly increased in size with accompanying displacement of the surrounding tissues, first of the three upper ribs on the right side and finally of the sternal end of the left clavical. At no time was there marked difficulty of deglutition, nor any change in the voice. Twenty months after entering the hospital the pain became so severe on the slightest exertion that he was obliged to remain in bed. At this time the skin over the tumor became so much darker that a rupture at that point was feared. During the latter part of November, 1892, nearly twenty-two months after he came under observation, the external portion of the tumor projected more than before, and on December 16th, a slight rupture occurred, and a few drops of blood escaped. On December 18th, quite a decided hemorrhage occurred. Still he continued to live for three days longer, when a portion of the tumor wall sloughed away, leaving an opening about an inch and a half in diameter, through which a clot projected and acted as a valve, preventing immediate death from hemorrhage. The

patient lived about half an hour after the occurrence of the last rupture.

At the autopsy the aneurismal tumor was found to involve the ascending, transverse, and upper portion of the descending aorta. Large as it was, the resulting displacement of the trachea was but slight, and its lumen not diminished. The esophagus too had escaped compression. The tumor measured eight inches in its long diameter and five inches in the short. Its depth from before backward was four and a half inches. The largest portion equaled in size the head of a new-born child. I have not been able to find any record of so large an aneurismal tumor in this situation.

MEDICAL PROGRESS.

Results of Ligature of the Subclavian Artery During One Hundred Years. — MICHAILOW (*Centralbl. für Chir.*, September 18, 1897) has made a study of 557 cases of aneurism treated by ligature of the subclavian artery, either alone or in conjunction with ligature of the carotid artery. Something more than half of these operations were done before the days of antiseptic surgery.

Of 70 cases of ligature of the subclavian and the carotid arteries during the same period, 45 were cured or improved, while 25 were not improved or died. In 18 instances the subclavian and carotid were tied at different times. Of these patients, 15 were improved and 3 not improved. Michailow says that the ligation of the first portion of the subclavian is no longer as hopeless an operation as it formerly was, and the results now obtained by ligature of the third and fourth portions of this vessel are far better than they once were. The treatment of aneurism within the thorax by the Brasdor-Wardrop method of distal ligation is worthy of further trial. The immediate ligation of both the subclavian and carotid arteries is necessary.

Substitute for Whitehead's Operation for Hemorrhoids. — EARLE (*Vir. Med. Semi-monthly*, October 8, 1897) has secured good results from an operative procedure, which he holds in higher esteem than the popular Whitehead operation. Like the latter, Earle's operation is intended for those patients who present an entire ring of internal and external hemorrhoids. The internal hemorrhoids are first grasped individually between two clamps, the pile being divided between them, and the cut surface closed by a continuous suture of catgut. The suture may be quickly applied by passing the needle over and under the clamp, leaving the turns of thread loose so that this instrument may be withdrawn. When this has been done the suture is drawn tight. The internal hemorrhoids having all been treated in this manner, a skin incision is made to the right and left of the anus directly over the dilated subcutaneous veins, and roughly parallel to the anal margin. Care must be taken not to have this incision pass the anterior or posterior commissure. The skin is reflected back, and the veins are dissected free, ligated, and removed. The superfluous skin is cut away, and its

edges united by a continuous catgut suture. By this means the writer claims to obtain all the advantages and none of the disadvantages of the more formidable Whitehead operation.

Recognition of Diabetic Blood.—The method described by WILLIAMSON (*Centrabl. für Inn. Med.*, August 21, 1897) rests upon the fact that diabetic blood has a stronger power of decoloration of a solution of alkanin methyl blue than normal blood. The method is so extremely sensitive that a single drop of blood suffices for the test. In a small test-tube are mixed 40 c.mm. of water, 20 c.mm. of blood, and 1 c.cm. of a watery solution of methyl blue (1-6000), and 40 c.mm. of liquor potassæ of a specific gravity of 1.058. For comparison a similar mixture is made with normal blood. Both test-tubes are then placed in a hot-water bath for three or four minutes. If the blood contains sugar, the mixture will become yellow. This test proved accurate in the case of eleven persons having diabetes, while the action was wanting in the blood of 100 non-diabetic patients. Lyonnet and LeGoff have tested this method in a number of cases and found it reliable.

Koch's New Tuberculin in Surgical Tuberculosis.—EVE (*The Lancet*, September 18th) has treated eight cases of surgical tuberculosis with Koch's new tuberculin. The results were not very encouraging. His impressions of the new remedy may be summarized as follows: Some slight, though no markedly favorable influence may be exerted in cases of early tuberculosis of joints, or in those in which no evidence of softening of caseous material exists. But the effect when caseous material has broken down, and especially if the disease has become septic, is negative. In nearly every case a considerable rise of temperature occurred after doses of from 1 to 2 mg. had been reached, and sometimes before. The pyrexia in some cases was very great, amounting to a rise of 7° F. Other unpleasant symptoms followed the administration of larger doses, such as vomiting, malaise, headache, and prostration. A local reaction was not observed.

Dislocation of the Semilunar Cartilage of the Knee.—BARKER (*The Lancet*, September 18, 1897) has operated upon six cases of partial or complete dislocation of the semilunar cartilage of the knee. From a study of the knee-joint during operation he satisfied himself that if the internal meniscus, which was the one affected in all his cases, is completely dislocated, no amount of manipulation or movement of the joint can restore it to its original position. Even if this were possible the action of flexion would immediately drag it into the joint again. The knee is by no means a simple hinge-joint, and the mechanism of its movements is far from clear, either in the dead or living. What appears to take place is this: In the first place, during flexion the point of contact between the femur and tibia appears to shift backward a little, which of itself would relieve the pressure on the anterior curve of the meniscus and push the posterior curve backward. But in addition it would incline the internal lateral ligament somewhat backward, and in this way drag the semilunar cartilage back through the attachment to the

lateral ligament. Apparently, one at least of the functions of the posterior crucial ligament is to prevent the femur from slipping too far backward, for it is rendered tense during flexion. Whether the explanation of the causes of the displacement of the meniscus be correct or not, the fact remains that during flexion in the living joint it may be seen to slip backward. The actual dislocation, however, is due to the nipping of the edge when the limb is extending, which fixes it between the two bones and prevents it from moving forward, while the capsule, being rendered tense by extension, is torn away from it more and more until there is nothing to prevent the cartilage from again slipping into the middle of the joint. It follows that in a knee-joint in which a partial slipping has more than once occurred, an operation should be performed which will prevent the complete dislocation from taking place. If there is complete dislocation there is more reason for immediate interference before the semilunar cartilage becomes altered in shape and texture. The cartilage should be stitched to the capsule of the periosteum, and only removed in those cases in which its form is greatly altered.

Enforced Hyperemia of the Apices of the Lungs.—Acting upon the suggestion of Rokitsansky, that tuberculosis and mitral insufficiency are incompatible because of the unusually high pulmonary hyperemia which the latter disease produces, JACOBY (*La Méd. Moderne*, September 22, 1897) has made an attempt to produce an artificial congestion of the apices in tuberculous subjects, hoping thereby to assist the body to overcome the invading bacilli. The patient is placed in a recumbent position with the shoulders lower than the hips, and the head slightly raised. A rubber jacket is worn which fits so snugly at the waist, neck, and arms, as to be water tight, but which has some fulness over the upper part of the chest. At the upper part of the jacket there are several rubber tubes about the size of the little finger, and so directed that when streams of water are forced through them, the water will strike the chest wall in front and behind the clavicles. At the waist of the jacket is an escape pipe. To provide for the comfort of the patient, the back of the garment contains a couple of air-cushions. From a reservoir, which is constantly heated by an alcohol lamp, water is pumped with considerable force through the tubes. The shock of the streams against the chest-wall, as well as the heat, produces a degree of hyperemia in the region of the apices sufficient, according to the writer, to materially benefit the patient. Of the twelve patients so treated, cough and expectoration were evidently benefited in nine. In one patient the cough was increased. In two instances it was necessary to give up the treatment on account of the cerebral congestion produced, due, according to Jacoby, to the fact that these patients were not given sufficient time in which to accustom themselves to the new conditions. Treatment should not exceed thirty minutes, and should be administered twice daily. To assist in producing apex hyperemia, the patient should spend not less than six hours every day in a recumbent position with the hips and legs elevated above the shoulders.

THERAPEUTIC NOTES.

Lactic Acid in a Case of Arthritis Deformans.—ZOLOTA-VINE (*La Med. Moderne*, September 18, 1897) used lactic acid with success in an old case of arthritis deformans, administering daily 10 drops of this drug upon an empty stomach, and allowing no food for an hour and a half afterward. The disease had lasted for ten years, and for a year the patient had not been able to leave her bed. The dose of the medicine was gradually increased to 40 drops daily. At the end of three weeks the action of the acid was manifest; the articular pains were so relieved that the woman was able to get out of bed and walk a little; the circumferences of the joints diminished slightly; nutrition improved and abdominal pains disappeared. No other medicine was used, and the only external treatment was a light massage. Improvement continued until the patient, at the time of writing, could walk without a cane and attend to her ordinary occupations.

Creosote in Gastro-enteritis in Infants.—On account of its antiseptic power ZANGGER (*La Presse Medical*, August 7, 1897) employs creosote in the gastro-enteritis of infants, using the following formula:

℞ Creosote	m. ii j
Alcohol	m. xv
Distilled water	℥ iii.

M. Sig. One teaspoonful three or four times daily.

In acute cases, vomiting and diarrhea cease after three or four spoonfuls of the medicine have been administered. Often the cure is complete in a few days. In cases which have lasted a week or ten days before treatment is commenced, the creosote will arrest the vomiting, but has little effect upon the diarrhea which has to be treated in the usual manner with calomel, bismuth, etc.

The Application of Guaiacol in Gonorrheal Epididymitis.—GOLDBERG (*Deut. med. Wochenschr.*, August 5, 1897) is a firm believer in the efficacy of guaiacol in the treatment of gonorrheal epididymitis. The drug is either painted directly upon the scrotum or a mixture of guaiacol and glycerin, equal parts, is employed for this purpose.

Ichthyol in Tuberculosis.—FRAENKEL (*La Med. Moderne*, August 7, 1897) extols the use of ichthyol in tuberculosis, having employed the remedy in some thirty cases. In incipient stages, the cough disappears in a few days. If the lesions are more extensive it may continue for some weeks or even months. Expectorations become more liquid and less abundant. All the symptoms are much improved. Twenty to forty drops of a mixture of equal parts of ichthyol and water should be taken four times daily. A little peppermint may be added to disguise the taste. In spite of its disagreeable odor and taste, the remedy produces no unpleasant gastric symptoms.

Simple Vertigo of Arteriosclerosis.—According to a writer in *La Presse Médicale*, September 15, 1897, simple vertigo, occurring in connection with arteriosclerosis, is a condition which is little understood, and often overlooked or badly treated. It is observed most frequently in private patients accustomed to careful analysis of their sensa-

tions, and presents the following symptoms: On waking the patient, who is of middle age, and has atheromatous degeneration of the arteries, feels a dull diffuse headache and is vaguely apprehensive. Suddenly on slight effort, such as sitting up in bed, he has a sense of constriction about the chest, while there is a cold sweat on the face, the limbs seem weak, and then the attack ceases, loss of consciousness not having occurred. These attacks may also come on at another time during the day, and may increase in severity with short periods of syncope. Treatment is to be directed to the general arteriosclerosis of which the vertigo is only one symptom. Iodid of soda should be taken continuously for years. In the beginning of the treatment trinitrin should be administered as well. At the same time the diet and mode of living should be thoroughly regulated. The prescriptions recommended are:

℞ Sodii iodid	℥ i
Aq. dest.	℥ iv.

M. Sig. A tablespoonful to be taken in milk or water twice daily after meals.

℞ Spir. glonoin	gtt. xxx
Aq. dest.	℥ x.

M. Sig. From three to six dessertspoonfuls during the twenty-four hours.

Ligation of the Dorsal Vein of the Penis for Functional Impotence.—MURRAY (*Jour. Amer. Med. Assoc.*, October 9, 1897), acting upon a suggestion of Bartholow, that ergot injected near the dorsal vein of the penis is of service in some cases of insufficient erection, tied the vein with resulting success in four out of the five cases in which he attempted the operation. The fifth patient was a sexual hypochondriac who suffered from impotence, which was not caused by a too rapid emptying of the vessels of the penis, and the case was, therefore, not suitable for this operation. In one of the remaining cases the difficulty was slight, and perhaps might have been cured without an operation; but in three of the patients the insufficiency of erection was plainly due to dilatation of the dorsal vein. All of these patients were naturally vigorous in this respect, and all had been guilty of sexual excess either in the form of masturbation or coitus. The ligation of the vein was followed in a few seconds by a powerful erection, necessitating the application of ice and the administration of large doses of bromids; but after a few days this too great susceptibility to erection passed away, while the penis retained its normal power of strong erection under natural stimulation.

Mechanical Treatment of Seasickness.—RAWLINS, an English physician, says that the elevation of the extremities will quickly relieve the symptoms of seasickness by increasing the arterial pressure, and thus diminish the anemia of the nervous centers due to the enfeebled action of the heart. The application of warm flannel bandages to the legs and arms will increase the effect produced by the simple elevation. In this way he was able to make two ladies comfortable during a journey to India, who had previously suffered seriously from severe seasickness.

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SATURDAY, OCTOBER 30, 1897.

THE MARINE HOSPITAL SERVICE AND A NATIONAL QUARANTINE SYSTEM.

EVERY thinking person, unless blinded by personal or local prejudice, must recognize the necessity for a more intimate Federal supervision of quarantine and public health than obtains at the present time. The recent conduct of quarantine affairs by local authorities is a scandal and a disgrace to civilization!

Subsequent to an epidemic of dengue, yellow fever appeared during the latter part of August at Ocean Springs, Miss. Quarantine against the infected town speedily followed the discovery of the true nature of the disease, but not quickly enough to prevent the scattering of hundreds of summer visitors and panicky residents throughout neighboring and distant places. As nearly as can be determined, from this one focus of disease, yellow fever has invaded five States and nearly a score of cities and towns.

Fortunately the epidemic thus far has made slow progress and the mortality has been comparatively small; but the dread name of the disease has alone been sufficient to terrorize many and has led to brutal encroachment on personal rights, even to murder, and to unreasonable interference with travel, trans-

portation, and trade. The commercial relations of New Orleans with outside communities have been cut off, and business has been stagnant for weeks, causing losses to merchants which already amount to many millions of dollars. From a city in Alabama, where the disease only recently appeared, a banker writes: "The great majority of our people are greatly alarmed and have 'refugeed' in large numbers to more Northern places. As a result of this condition of affairs business is *absolutely paralyzed*." Similar conditions prevail to a great extent on the Gulf coast from Mobile to Galveston, while the States of Alabama, Mississippi, Louisiana, and Texas are given over to terror and anarchy, masquerading under the name of "local" quarantine.

That this disastrous condition of affairs is due to a lack of uniformity in quarantine laws and a want of authority in their enforcement is plain to all. Every State, nay every community having a board of health or health-officer, has its own quarantine regulations which vary much in efficacy and in manner of enforcement. It thus follows that a State maintaining a rigid quarantine against the outside world may be unsuccessful in efforts to exclude the disease on account of the lax precautionary measures practised by a neighboring State.

The origin and course of the present epidemic proves the utter untrustworthiness and inadequacy of local quarantine. Nearly all previous epidemics have taught the same lesson. A uniform law with adequate authority to sustain its impartial and fearless enforcement is the only defense against these perennial invasions. Some department of the National Government is the proper agent to enforce such a law.

Uniformity and authority can be secured in no other way. The first duty of this branch of the Government, however constituted, should be the establishment of a National quarantine worthy the name. Later, it should assume the conduct of matters of public health on a broad and scientific basis.

In the establishment of this new Department of Public Health we have at hand an available and substantial foundation upon which to build, *viz.*, the Marine Hospital Service. This position has also been maintained by Dr. Jerome Cochran at the meeting of the American Medical Association in Atlanta, May 5-8, 1896. Few, except those personally interested, know what varied and vital functions this

department of the Government exercises and has faithfully performed during the last few years. Aside from a hospital service, it successfully manages one-half of the twenty-four quarantine stations of our seaboard; it examines life-savers, pilots, and candidates for the revenue service, and inspects immigrants at eight important ports of entry; it has investigated scurvy, cholera, yellow fever, smallpox, plague, with especial reference to their causation and prevention, and in its hygienic laboratory has studied diphtheria, pneumonia, vaccinia and smallpox, enteric and malarial fevers, and has tested various disinfectants; it has instituted inquiries concerning water-supplies and the disposal of sewage and garbage in cities and towns, and has investigated cases of water pollution; it has studied foreign and domestic quarantine administration, from which it has collected and tabulated sanitary reports and statistics of great value, and, last but not least, has been a most active and persistent opponent to the antivivisection legislation which has so long threatened us.

Such is the institution upon which it would seem most advisable to build a Department of Public Health. It possesses the confidence of the people, is already organized, has expensive and effective plants at appropriate stations, and simply needs to be enlarged and endowed with new functions and more ample powers, to fulfil all the requirements.

THE CHARITIES COMMISSIONERS' FATAL PRECEDENT.

ON more than one occasion the Charities Commissioners of this city have apparently acted in opposition to the best interests of the institutions within their jurisdiction, and, as history will testify, have seemed to be entirely insensitive to the rights of the physicians constituting the medical boards of the city hospitals. We need only refer to the flagrant misuse of power in which they indulged last year in experimenting with a quack medicine for the cure of the alcoholic habit, and which THE MEDICAL NEWS combated to a victorious end.

Recently the personnel of the Board of Charities Commissioners has undergone an important change in the accession of Dr. Stephen Smith to the presidency, and it is but natural that the medical public should anticipate an improvement in the attitude of the board toward physicians. The last official act

of the Commissioners, prior to the change mentioned, is so fatal to the best interests of the city hospitals, and to a continuance of the high professional standard which has been maintained in the medical boards, that we are constrained to refer to it. The fact that the appointee in this instance is in every way worthy the honor conferred upon him cannot excuse an official, responsible commission from the offense of rescinding established rules for the purpose of accomplishing a specific transitory object.

The power of making appointments to the medical staffs of the various city hospitals has hitherto properly been in the hands of the Commissioners. The respective medical boards have, however, exercised a salutary influence upon the constitution of the medical staffs by reserving the privilege of nominating candidates. Time has so consecrated this method of procedure that no one, heretofore, has sought admission to a visiting staff save in this way. The most recent appointment to the medical board of Bellevue Hospital was made in a manner entirely at variance with traditional methods. A vacancy occurring in the fourth, or non-collegiate, division of that hospital, the medical board in accordance with the rule of the Charities Department nominated a candidate in the usual way, but for some reason best known to themselves the Commissioners rejected the nomination—the nominee being an eminently representative man—assigning no reason and asking no other nomination. The appointment hung fire during the entire summer, much to the astonishment of those interested. During this time a new candidate presented himself before the Commissioners, and it was known that his candidacy was warmly espoused by at least one of them. The problem which confronted the Board of Charities Commissioners upon the eve of its disruption was how to avoid appointing the regular and legitimate nominee, and to appoint a man who had not been regularly nominated, but who apparently possessed an enormous influence. The members of the board evidenced their resourcefulness, when put to the test, by introducing at the last meeting before the departure of the outgoing president, a motion to amend the rules of the department so that the nominating power be taken from the medical board and vested in the Commissioners themselves. It is needless to add that the favored candidate promptly received his appointment.

It requires no considerable feat of imagery to depict the demoralization which will eventually result if this hasty and nepotistic action is not rescinded. In the future it may be expected that the physician who can make the deepest impression of *personal worth* and *ability* upon the Commissioners, in other words, he who wields the greatest "influence" will secure the appointment. All the safeguards which had been placed around the appointing power to keep the hospital appointments free from politics have been abolished, and our city hospitals are in danger of falling into the hands of men who will use their positions to advance personal interests and emoluments, at the sacrifice of science and of the patients whom circumstances confide to their care.

In anticipation of such a result we respectfully call upon the Board of Charities Commissioners of the city of New York to reconsider its action, and restore the just and equitable mode of accession to the visiting staffs of the various city hospitals—a system which has so well served the public interests during past years.

WOOD PAVEMENT FOR STREETS.

As the question of street pavement is always an active one in American cities, it may be worth while to notice an article on wood pavement by Amat in the *Bull. Gen. de Therapeut.* This pavement, which is much used in London, Paris, and some other European cities, has found little favor here. Amat compares its advantages and disadvantages with those of granite blocks and asphalt. With reference to cleanliness, he places them in order of merit as follows: asphalt, granite, wood; with reference to quiet, they stand wood, asphalt, granite; and with reference to cheapness, granite comes first, then wood, and lastly, asphalt. In durability, the order is granite, asphalt, wood; but for ease of repair, asphalt, wood, granite; and for safety of the horses, wood, asphalt, granite.

Thus it will be seen that, although asphalt presents great advantages, the two requisites of quiet and security for horses in which wood excels it, must give the latter the preference, unless it can be shown that in some way it is detrimental to the public health.

Unless unusual precautions in the way of sweeping, washing, and disinfection are daily carried out, a

wood pavement is certain to give off considerable odor, and even the deepest portions of the blocks are found to contain ammonia.

The dust arising from the wear of wood pavement is insignificant. In the streets where traffic is most constant, not half an inch of the pavement is worn away in a year—and the most of this is washed or swept away. A macadam roadway under similar usage loses four or five inches.

Bacteriologic investigation by Miguel showed that only a small number of bacteria penetrate the wood block while the upper layer contains millions. Thus he found from a million to a million and a half of germs in a gram of sawdust from the upper surface, and from five hundred to four thousand in a gram of sawdust taken from the block two inches below the surface. The pavements tested were ten years old.

Rolst and Nicoles who repeated these experiments but reduced the sawdust to a fine powder, found more than twenty times the number of bacteria reported by Miguel, *i.e.*, fifty millions to eighty millions at the surface, and forty thousand to four hundred thousand two inches below the surface. The pavements tested were about five years old.

Putting aside altogether the bacteria which have penetrated into the deeper portions of the block, it is still evident that dust from the surface layer must be heavily laden with microbes. Just how unhealthy wood pavement is, or, whether it plays any part whatever in the production of disease, still remains unproved; though the above experiments make it extremely probable that wood pavement does not compare favorably with either granite or asphalt from a hygienic standpoint.

ECHOES AND NEWS.

Epidemic of Typhoid in a School.—Forty cases of typhoid have occurred in the Boys' Industrial School at Lancaster, Ohio. The source has been traced to a foul water-supply.

Emperor William and the Leprosy Conference.—The members of the Leprosy Conference recently in session at Berlin were received at Potsdam by the Emperor and Empress of Germany.

Li Hung Chang's Woman Physician.—The chief physician of Li Hung Chang's household is a woman named Hu King Eng, a graduate of the Woman's Medical College of Pennsylvania.

Measles at Esquimaux Island.—Measles is prevalent among the Indians of Esquimaux Island, Labrador, and more than thirty deaths have occurred in the tribe, which numbers about two hundred persons.

Investigation in an Orphan Asylum.—The New York State Board of Charities is making an investigation of the allegations of cruelty to children by the managers of the De Peyster Orphan Asylum at Tivoli, N. Y.

Medical Director Tryon Ordered to New York.—J. R. Tryon, recently Surgeon-General of the Navy, has been detached from the Bureau of Medicine and Surgery, and ordered to New York as general inspector of the New York Naval Hospital.

Glass Tooth-Filling.—Glass, prepared by a new patented process which renders it soft and malleable, is now used by dentists to fill the cavities in teeth. It is said that it answers the purpose admirably, and is less conspicuous than gold.

Poisoned by Verdigris.—Four hundred emigrants on the Italian steamer "Agordat," bound from Genoa, Italy, to Santos, Brazil, have been poisoned by verdigris from the soup kettles in which their food was cooked. It is feared that many will die.

Pasteur Memorial Fund.—More than \$2000 have been contributed in India to the Pasteur Memorial Fund. A Pasteur Institute is to be established at Simla upon a site which has been presented to the Indian government by the Maharaja of Patiala.

Christian Greece and Living Greek.—Dr. Achilles Rose of New York, who has long been known as an ardent advocate of the use of Modern Greek as a universal medium of medical nomenclature, has in readiness for the press a monograph bearing the above title.

Legacies for Harvard Medical College.—The late Dr. Antoine Ruppaner bequeathed to Harvard Medical College the sum of \$10,000, to be called the Dr. Ruppaner Fund. The sum of \$5000 has been given by Mr. H. H. Hunnewell toward the endowment of the Surgical Laboratory of the same institution.

Quebec Physicians Prohibited from Serving Benefit Societies.—According to the *Times* (London) the Quebec College of Physicians and Surgeons has issued a decree prohibiting medical men from accepting positions as physicians of charitable or benefit societies under pain of withdrawal of the privilege to practice.

Lectures by Sanarelli.—Professor Sanarelli, who is expected soon to arrive in Genoa, Italy, will start on a series of visits to the leading medical schools of Europe, at each of which he will deliver a lecture on his discovery of the bacillus of yellow fever, and present his recommendations for the prophylaxis and treatment of the disease.

Transfer of Dr. James E. Pilcher.—Recent War Department orders transfer Dr. James E. Pilcher of the Army Medical Department from Columbus, Ohio, to Fort

Crook, Neb., a fact which will be of special interest to the members of the Association of Military Surgeons of the United States, of which organization Dr. Pilcher is the secretary and editor.

Diphtheria in Connecticut.—Diphtheria is epidemic in Montville and Greenville, near Norwich, Conn. Twelve deaths have already occurred in the former town, where the disease first made its appearance a month ago, and whence it was carried to Greenville. All schools are closed and the health-officer at Norwich is endeavoring to prevent the disease from spreading to that place.

Officers of the New York County Society for 1898.—At the annual meeting of the New York County Medical Society, held Monday evening, October 25th, the following officers were elected for the ensuing year: President, Dr. A. M. Jacobus; first vice-president, Dr. Nathan E. Brill; second vice-president, Dr. B. Farquhar Curtis; secretary, Dr. Chas. H. Avery; treasurer, Dr. John S. Warren.

A Green Cross Society.—A society having for its object the giving of "first aid" in cases of accident has been organized in St. Petersburg under this name. The need for such an organization is shown by statistics collected by the originator, M. Chernik, by which it appears that during the twelve years, 1881-1893, there were in St. Petersburg alone 46,618 registered accidents, and the number is yearly increasing.

W. K. Van Reyphen Appointed Surgeon-General of the Navy.—President McKinley has appointed Medical Director W. K. Van Reyphen to succeed General Bates, deceased, as Surgeon-General of the Navy. Dr. Van Reyphen was appointed to the navy from New Jersey as assistant-surgeon in 1861, and made an excellent record during the civil war. He has been a member of the Board of Inspection and Survey since 1894, and attained the rank of Medical Director in March, 1895, while stationed in Washington. He was Fleet-Surgeon of the Pacific station for several years.

Decision against the New York Board of Health.—In the Appellate Division of the Supreme Court of New York a decision was handed down by Justice Rumsey to the effect that the condemnation and destruction by the Board of Health of four tenement-houses in the rear of 308 to 314 Mott street, New York, on the ground that they were unfit for habitation, was unlawful in that it was not proved that they could not be made habitable. In the opinion, however, the power of the Board of Health to vacate and destroy unhealthy tenements is expressly upheld, and it only provides for a new trial at which the Health Board may offer further evidence to prove that sanitary evils caused by the condition of the buildings could only be remedied by their destruction. The Board of Health will appeal the case.

Italian Foundling Hospital Scandal.—The first report of the investigation into the condition of foundling asylums in Italy has just made its appearance. It deals with the Brefotrofio of Padua, and is by Dr. Natali, provincial

medical officer, who describes it as being worse than defective in every requirement of hygiene, and calling for prompt and energetic improvement. The women who wet-nurse the babies are never allowed to go beyond its walls, except in cases of urgent necessity, and this confinement has a very bad effect upon their health and that of the foundlings. Artificial feeding and its disastrous results come in for Dr. Natali's most severe censure. The death-rate is 94.20 per cent. The medical service is under the supervision of one physician at a salary of 600 lire (about \$100) per year. His duties also include the responsibility of the prison-service attached to the law-courts.

Health Reports.—The following statistics concerning smallpox, yellow fever, cholera, and plague, have been received in the office of the Supervising Surgeon-General of the United States Marine Hospital Service, during the week ended October 23, 1897:

YELLOW FEVER—UNITED STATES.

	Cases.	Deaths.
Mobile, Ala.....October 16-22.....	49	7
Montgomery, ".....October 18-20.....	7	1
Baton Rouge, La.....October 18-22.....	2	1
Franklin, ".....October 14-21.....	3	1
New Orleans, ".....October 16-22.....	300	33
Bay St. Louis, Miss.....October 17-19.....	7	1
Biloxi, ".....October 16-22.....	110	6
Cayuga, ".....October 16-22.....	19	1
Clinton, ".....October 16-22.....	16	..
Edwards, ".....October 16-22.....	30	5
McHenry, ".....October 16.....	1	..
Nitta Yuma, ".....October 16-21.....	3	..
Pascagoula, ".....October 18-22.....	13	1
Scranton, ".....October 16-22.....	77	2
Waveland, ".....October 19.....	2	..
Memphis, Tenn.....October 22.....	1	..

YELLOW FEVER—FOREIGN.

Cardenas, Cuba...October 2-9.....	..	1
Havana, ".....October 1-14.....	..	39
Matanzas, ".....September 30-October 2.....	..	2
Regla, ".....September 1-14.....	..	30
Santiago de Cuba, ".....October 2-9.....	..	8
Sagua la Grande, ".....October 2-9.....	..	3
Kingston, Jamaica.....September 1-October 2.....	6	7

CHOLERA—FOREIGN.

Bombay, India.....September 14-21.....	..	31
Calcutta, ".....September 4-11.....	..	3
Madras, ".....September 11-17.....	12	6

PLAGUE—FOREIGN.

Bombay, India.....September 14-21.....	..	35
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SMALLPOX—UNITED STATES.

Birmingham & s'b'rb's, Ala.....October 9-16.....	2	..
McKeesport, Penn.....October 9-16.....	1	..
Memphis, Tenn.....October 14.....	1	..

SMALLPOX—FOREIGN.

Rio de Janeiro, Brazil...September 11-28.....	7	1
Cienfuegos, Cuba...October 3-10.....	..	1
Sagua la Grande, ".....October 2-9.....	30	2
Calcutta, India.....September 4-11.....	..	2
Odessa, Russia...September 25-October 2.....	1	..
St. Petersburg, ".....September 25-October 2.....	16	5
Warsaw, ".....September 25-October 2.....	..	5
Glasgow, Scotland.....September 25-October 2.....	17	..
Madrid, Spain.....September 28-October 25.....	..	2

A Question of Priority.—In a recent issue of the *Centralblatt für Chirurgie*, 1897, No. 39, there is a notice of a paper by Bloch, presented at the Moscow Congress, in which appears an account of a resection of a portion of a kidney for diagnostic purposes. It is interesting that a similar procedure was conceived by Dr. D. D. Stewart of Philadelphia, at a presumably earlier date, the operation being done for him by Dr. W. W. Keen of Philadelphia. In Dr. Stewart's case a portion of a kidney sufficient for histologic study was excised by Dr. Keen during December, 1896. An account of Dr. Stewart's case appeared in a paper, entitled "A Further Communication on the Occurrence of a Hitherto Undescribed Form of Chronic Nephritis Unassociated with Albuminuria," read before the Association of American Physicians during May, 1897, and also appearing in the transactions of the association, as well as in *The Lancet*, September 4, 1897.

Obituary.—Newton L. Bates, Surgeon-General of the United States Navy, died in Washington on the 18th inst. He was appointed by President McKinley on October 1st, and was so ill at the time that the oath of office was administered to him while in bed. Alarming symptoms developed only two or three days before he died. General Bates was assigned to the Mississippi Squadron in 1863. He served at the New York Naval Laboratory from 1864 to 1867, after which he rendered service at sea. He was Fleet Surgeon of the South Atlantic Station from 1873 to 1876, and subsequently of the European Station. He leaves a widow, who was a Miss Bates, a daughter of Medical Director Bates of the Navy.—Dr. James P. Daly, who was candidate for coroner in the Borough of the Bronx, died suddenly on the 15th inst. of apoplexy brought on apparently by overwork and the excitement incident to the opening of the campaign. He addressed two political meetings on Thursday, became unconscious shortly after reaching home, and died early Friday morning. He was only thirty-six years of age.—Dr. William H. Ford, President of the Philadelphia Board of Health, died suddenly on the 19th inst. at his summer home at Belmar, N. J., aged fifty-eight years. He was an authority on hygiene and sanitation, and well known to physicians throughout the country.

Yellow-Fever Notes.—The continued spread of yellow fever in the South has necessitated many additional employees in the Marine Hospital Service. On the recommendation of Surgeon-General Wyman, the Treasury Department has appointed thirty-four assistant surgeons and fifty-two guards to do duty in the yellow-fever section and on the borders of the States where the disease may spread. More appointments will be made if necessary.

Up to October 21st there have been 110 deaths from yellow fever in New Orleans. The largest number of new cases occurring in a single day is sixty, reported on the 20th inst.

Senator Caffrey of Louisiana has arrived in Washington, where he will confer with Surgeon-General Wyman and endeavor to prepare a bill which will place under Federal control all quarantine regulations and the management of epidemic diseases.

Dr. John Guiteras of the Marine Hospital service, who has been investigating the yellow-fever epidemic, returned to Philadelphia, but has been again ordered to the yellow-fever district. He makes the statement that ninety per cent. of all cases of yellow fever imported into the United States comes from Cuba, and that the disease will be kept out of the country only when there is a complete system of sanitation at Havana.

Five cases of yellow fever were reported to the Board of Health of Montgomery, Alabama, on the 20th inst. Owing to the prevalence of the disease at that place and on account of all the towns and cities in the State being quarantined against it, the seat of government has temporarily been removed to Birmingham.

At a prize-fight recently given in New Orleans for the benefit of yellow-fever sufferers, one of the contestants was so brutally treated that he died soon after being removed from the ring.

On October 22d fifty new cases of yellow fever were reported in New Orleans. Up to that time there have been 1074 cases and 117 deaths in that city.

Dr. Sanarelli does not claim to be able to prevent yellow fever by inoculation with his serum, but asserts that his discovery will reduce yellow-fever mortality to ten per cent. by modifying the disease.

The first case of yellow fever at Memphis appeared on the 22d inst. The patient has been isolated and no spread of the disease is apprehended.

It is estimated that nearly \$1,000,000 has been expended for quarantine purposes by the States, counties, cities, and towns in the infected districts. The belief is also expressed that a national system could be maintained at an annual cost of half a million dollars.

In Texas a combined meeting of the Boards of Health of Houston and Galveston was held, and Dr. Guiteras was denounced to Governor Culberson for having libelled the State by the declaration of the presence of yellow fever. In spite of this, Health-Officer Swearingen admits that yellow fever exists in a mild form in both of the cities mentioned.

It was mentioned in THE MEDICAL NEWS of last week that an epidemic of what was held to be malignant typhoid fever has been raging in the island of Jamaica. When the death-rate rose from thirty to seventy-five per cent. the disease was pronounced yellow fever. Without government assistance or power to enforce restrictive measures, the medical men who responded to all calls for their services were long unable to do much except in individual instances, and a movement was started to compel the governor to put into force by proclamation the clauses of the Public Health Acts providing for isolation and local quarantine in case of epidemics. Finally, acting under pressure from American and other foreign residents, the governor has brought the four parishes of the island in which the disease has appeared under the rule of segregation and other preventive measures. One of the victims of the scourge was W. J. Scanlon, United States Consular Agent at Port Antonio, who died after a few days' illness. Mr. Dent, United States Consul, had a slight attack of the disease from which he recovered. Passenger traffic to

the United States has practically ceased, and shipping agents are refusing to issue tickets.

Fifty-two new cases of yellow fever were reported in New Orleans on the 25th inst., with eleven deaths—the highest mortality yet recorded in one day. Eighteen new cases are reported in Montgomery, Ala., and seven, with four deaths, at Mobile, Ala. The disease appeared for the first time in Selma, Ala., on the 22d inst.

CORRESPONDENCE.

OUR BERLIN LETTER.

[From our Special Correspondent.]

SPECIALIZATION IN WEEKLY MEDICAL JOURNALISM—ACTINOMYCOTIC APPEARANCES OF TUBERCLE BACILLI IN THE TISSUES—PROFESSOR KLEMPERER ON ORGANO-THERAPY—PROFESSOR VIRCHOW AND THE HIGHER EDUCATION OF WOMEN.

BERLIN, October 24, 1897.

THE latest addition to the ranks of medical journalism here in Germany is a *Wochenschrift für Therapie und Hygienie des Auges*, while a weekly journal devoted to consumption alone is also announced. Just how it will be possible to secure every week enough interesting material of really scientific value in specialties so narrow has been the subject of considerable caustic comment in the German medical press.

A very interesting series of observations from the laboratory of Professor Friedrich of Leipzig, appear in the last number of the *Deutsche Medicinische Wochenschrift*. He has been experimenting with miliary tuberculosis as produced by direct injection of the tubercle bacillus into the right ventricle through the jugular veins. He finds in the preparations made from the lungs, kidneys, and iris, within fifteen to thirty days after a successful injection, a series of appearances strikingly like those seen in actinomycosis. Such appearances have been noted by several writers, but only in passing and as a bacteriologic curiosity. Here there is question of their constant occurrence under the circumstance and within the time mentioned. In the sections the bacilli were seen arranged in more or less rosette forms, the radial portions consisting of bacilli with bulbous ends, and the whole picture being almost exactly that which is usually said to be characteristic of actinomycosis. So close was the similarity that for a time the observer thought an accidental contamination of his injections had occurred, but careful precautions precluded such a possibility. The observations are especially interesting in the light of recent developments as to the botanic specificity of microbes and the family relations of various groups. To the infectious granulomata, syphilis, tuberculosis, and leprosy, actinomycosis stands in such an analogous relation as fluorine to the halogen group in chemistry, so that this *rapprochement* of their bacterial causes is suggestive. Professor Friedrich is of the opinion that further investigations may disclose the meaning of the club-shaped ends of the radii of actinomycosis (a disputed point), and throw some light on the appearances in tubercle bacilli, usually considered to be spores.

Professor Klemperer is giving a set of lectures on "Advances in Internal Medicine with Special Reference to Therapeutics." He talked the other day on the practical application of organotherapy, and as he may be considered to fairly represent German practice, his remarks are of special interest.

In Basedow's disease he has seen thyroid extract accomplish a great deal of good, and while the theory that the symptoms of the affection are due to hyperthyroidism, *i.e.*, the presence of too much thyroid secretion in the organism, is not without many supporters, and would seem to contraindicate its use, he considers that thyroid medication should always be given a thorough trial. Where symptoms are made worse its use must be discontinued; but nothing short of a fair trial can decide whether a given case is, or is not, suitable for the treatment. This variety of therapeutics is eminently empiric, and is simply an index of the lack of physiologic knowledge on the subject.

Ordinary goiter in its incipient stage readily yields to treatment with thyroid extract, and even advanced cases, except where there has been actual neoplastic tissue formation or a large overgrowth of connective tissue from irritative processes in the glandular septa, are distinctly benefited by it.

For obesity, thyroid extract in ascending doses, especially when combined with diet and exercise, has given excellent results. It should be remembered, however, that while it causes the disappearance of fat from the tissues, it also causes an increase of nitrogenous waste. It should be used judiciously and with the greatest care. Patients must be constantly under a physician's supervision while taking "the cure." If the dietetic errors which have caused the obesity are continued, the thyroid medication will have very little or, at best, only the most transient effect. A careful dietary must accompany the use of the remedy. In regard to testicular secretion, Brown-Séquard's claims as to its powers have never been substantiated in practice, and the same is true of the spermines. Piperazine, a sort of artificial spermine, which for a time enjoyed quite a therapeutic reputation has fallen into almost absolute disuse. Professor Klemperer has observed good effects from the use of the extract of the prostate gland in cases of prostatic hypertrophy. The theoretic action of the organic extract is not quite clear, but it is supposed to give tone to the prostatic portion of the urethra and vesical fibers which are in connection with the gland, so as to lead to more complete emptying of the bladder. The prostate has been observed to decrease in size in a number of cases in which the extract was employed, and so the real obstacle to urination and the primary causes of urinary retention is removed. Professor Klemperer admits that there is great latitude for opinion as to what may be considered improvement. It seems clear that mental impressions are sometimes the most potent factors in the resulting improvement. The Berlin experience in the matter is interesting. When the principle of the treatment was first announced a certain number of Berlin pharmacists ordered prostatic extract, and quite an amount of the preparation was put up and

sold. A number of instances of improvement were reported after its use, when an inquisitive investigator found that what the butchers had been supplying was not the prostatic tissue of the cattle but their seminal vesicles.

Professor Klemperer considers, however, that the successes so far attained by the use of the prostate gland make it imperative to try a thorough course of the treatment before advising surgical interference; for after all none of the many surgical measures have given the results that have been claimed for them.

Oöphorin, extract of ovarian tissue, has seemed to give good results in a number of cases of climacteric disorder. Here, of course, the chance for mental suggestion is so great that the real efficiency of the preparation is extremely doubtful. In these very bothersome cases, when remedies fail while symptoms multiply, and when the patient must be given something, it is a welcome addition to the physician's armamentarium.

The announcement that fifteen women were about to enter the University of Vienna for the first time in its history has recalled attention to the question of the higher education of women in Germany. At the banquet which closed the meeting of the Society of German Naturalists and Physicians at Braunschweig (Brunswick) last week, Professor Virchow gave expression to his feelings with regard to the question. Despite the deep-seated prejudices which exist among Germans generally in the matter of higher education for women, Professor Virchow was listened to, as he always is, with a great deal of attention, and his remarks occasioned hearty applause.

Though Professor Virchow has generally been considered to be favorable to the higher education of women (in fact his position in the matter made him the subject of a special reception on the part of the women doctors at the Congress at Moscow), this is the first time that he has given public expression to his views. He recalled the suspicions with which the first meeting of The German Society of Naturalists and Physicians had been observed by Church and State. He said: "Our first meetings were of necessity held in secret, and only after much exertion could permission be obtained to hold sessions in public. The strong spirit of the German universities overcame the prejudices of those times. When I conjure you as far as possible to maintain that spirit, let not the lady members construe it into opposition to their academic aspirations. I have never taken a decided position with regard to the movement, but have observed with pleasure how one woman after the other has raised herself intellectually above the majority of her companions in sex and age. I have never been an ardent advocate of women's rights, but neither have I been an enemy to the movement, and have watched its development with the greatest interest. This Society has the merit of first permitting women to enter the sacred circle of science. Before that she could only go to the theater and the concert. The step then taken seems to have been in the right direction, and in accordance with the evolutionary movement in education which marks the latter half of the century."

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

AN ASSOCIATION OF HOSPITAL MANAGERS—COMPLETION OF THE BUILDINGS OF THE PENNSYLVANIA HOSPITAL FOR EPILEPTICS AND COLONY-FARM—COLLEGE OF PHYSICIANS OF PHILADELPHIA—DR. H. F. HARRIS ELECTED ASSOCIATE PROFESSOR OF PATHOLOGY IN THE JEFFERSON MEDICAL COLLEGE.

PHILADELPHIA, October 23, 1897.

A MOVEMENT is gaining progress in this city to bring about the formation of an association of hospital managers, and a concerted effort is being made by several of the more actively interested in this project to call a formal meeting early next month. The exact aims of such an organization are as yet quite veiled to the public, owing to the reticence of those concerned in the movement, but enough has been positively stated to give the impression that the association will have for one of its objects the improvement of the management of hospital affairs, and sufficient has been negatively stated to show decidedly that the projected league does not propose to become a "union" to influence city and State appropriations which could not be obtained single-handed; some have been so unkind as to hint at the latter. As this association aims to regulate the question of medical "charities," particularly of the dispensary type, it cannot be organized too promptly, and it will be earnestly hoped by many medical men of this city that such may be its chief object. Philadelphia, like many another large city, is damned with a large excess of dispensaries, belonging to hospitals, to churches, to "philanthropists," and, until quite recently, to certain physicians, who by such means hoped to compete in the universal scramble for patients. So that, should this hospital association be organized, unlimited work awaits it in the centralization and the direction of medical charities; and its efforts in this direction will receive the hearty endorsement and approval of hundreds of medical men and of the more intelligent of the laity, who understand the dispensary evil, and who desire its correction.

The Pennsylvania Hospital for Epileptics and Colony-farm at Oakbourne has been lately completed, and is now ready for occupancy. The formal opening will take place in a few weeks. The new hospital is made up of three buildings, but it is intended to extend from time to time the field of the work, as funds permit, and to establish cottage after cottage on the grounds of the institution. The idea of the managers of the hospital to colonize on a large scale in this locality as many epileptics as the State can support is an undertaking which, from its humane basis and its eminently practical results, must meet with the sympathy of every one interested in the welfare of this unfortunate class of the community, and that such results outweigh the cost of the monetary outlay is conceded by all students of sociology. The institution has been made a possibility through the generosity of Mr. Henry C. Lea of Philadelphia, who contributed \$50,000 for the erection of the buildings, while the hospital has also received liberal endowments from other individuals and from the

State. The medical staff of the hospital is as follows: Medical director, Dr. S. W. Morton; staff of visiting physicians, Drs. Harvey Shoemaker, G. E. Shoemaker, H. A. Slocum, Wm. C. Posey, A. A. Bliss, Wm. G. Spiller, A. Ferree Witmer, and S. W. Morton. The consulting physicians are Drs. S. Wier Mitchell, J. M. Da Costa, G. E. de Schweinitz, J. William White, and Charles H. Burnett.

At a meeting of the Section on Ophthalmology of the College of Physicians, held on October 19th, Dr. G. E. de Schweinitz presented a note on the occurrence of supposed tobacco blindness in horses, with the exhibition of a number of microscopic specimens illustrative of his remarks; and also read a paper on the blood-vessel formation in the vitreous. Dr. S. D. Risley reported a case of ocular and general disturbance as the consequence of a traumatism of the head. Dr. Edward Jackson read an interesting paper upon autoscopy. Dr. P. N. K. Schwenk exhibited, by invitation, an instance of rupture of the iris resulting from a contusion. Dr. H. F. Hansell exhibited a case of congenital aniridia; a case showing the result of puncture of the sclera in detachment of the retina; and also made some remarks concerning the value of pilocarpin in non-specific central retinal chorioiditis.

At the last meeting of the Section on Gynecology of the College of Physicians on October 21st, Dr. W. Reynolds Wilson read a paper on the anatomic points involved in Emmet's method of operating upon the perineum in instances of laceration of the third degree. Dr. John B. Deaver reported three cases of hysterectomy, two of which were for fibroid growths, and the third for a very extensive parovarian cyst. Dr. J. M. Baldy reported a case of ovarian cancer in a girl sixteen years old, also a case of pelvic inflammatory disease in which the use of Murphy's button was necessary.

Dr. H. A. Hare, who has been convalescent from an attack of enteric fever for several weeks, has gone to Bristol, R. I., for a stay of a month or more. During his absence the chair of therapeutics in the Jefferson Medical College will be filled by Dr. G. E. de Schweinitz, while Dr. E. Q. Thornton will deliver the didactic lectures on materia medica.

Dr. Richard C. Norris' condition is reported by his attending physicians to be improved. It is now hoped that he may recover from the severe septic infection from which he has suffered for the past two weeks.

Dr. W. Frank Haehnlen, who has been seriously ill for several weeks, is reported to be convalescing rapidly, and will shortly be able to resume his lectures on obstetrics at the Medico-Chirurgical College.

Dr. H. F. Harris has been elected associate professor of pathology and bacteriology in the Jefferson Medical College. Professor Harris graduated at the Jefferson Medical College in 1888, since which time he has been largely engaged in the teaching of pathology and chemistry, having occupied for six years the chair of these branches in the Southern Medical College, at Atlanta, and more lately the position of associate in pathology in the Jefferson Medical College.

The mortality in Philadelphia during the week ending October 23d reached a total of 376—a decrease of 16 from the preceding week, and an increase of 2 over the corresponding week of 1896. Of the total number of deaths, 103 occurred in children under five years of age. New cases of contagious diseases numbered 212, or 4 less than last week, with 33 deaths from such causes. There were 118 cases of diphtheria, with 26 deaths; 53 cases of scarlet fever, with 3 deaths, and 41 cases of enteric fever, with 4 deaths.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

EXCISION OF TUBERCULOUS FOCUS FROM AN EYE—THE ALBUMINURIA OF DYSPEPSIA—NON-TUBERCULOUS FAMILIES—THE ACTION OF DIGESTIVE FERMENTS UPON TOXINS—THE NATURE OF SHOCK.

At the session of the Academy of Medicine held August 10th, VALUDE mentions an instance in which he removed a focus of tuberculosis from the eye of a child aged five years. The disease involved the sclerotic coat. After its removal, the sclerotic wound was sutured. The operation was entirely successful, and ten months later there was no trace of a recurrence.

At the session of August 17th, ROBIN spoke of the albuminuria which occurs in connection with dyspepsia, and which possesses peculiar features. Such patients have hypersthenic stomachs with good appetites, gastric dilatation, an enlarged liver, and constipation. They complain of weakness and vertigo, but do not have edema. The albuminuria is variable, changing according to the diet of the patient. Early in the morning it is usually absent; there are no casts in the urine, but a certain amount of indican and oxalic acid is invariably present.

Most authors attribute this albuminuria to the absorption of toxins formed in the alimentary canal. It seems to Robin, however, that it is due to the absorption into the blood of albumin which has not been perfectly digested, and which acts upon the kidneys as a foreign body. If seen in the beginning and properly treated it is easily cured, but not more than one-third of long-standing cases are curable. The regulation of the diet is the most important part of the treatment. It is best to try the patient for a few days upon exclusively animal diet, and then upon exclusively vegetable diet. In this way it may be ascertained which sort of food produces the albuminuria, and the diet may be regulated accordingly.

DUBOUSQUET-LABORDERIE mentioned a curious instance of freedom from tuberculosis possessed by certain families living in Saint-Ouen. These families are descended from gardeners and have by their thrift become fairly well-to-do. They live at present with good hygienic surroundings, and among them the death-rate does not exceed 15 per 1000. Tuberculosis is almost unknown; while the average mortality of the district is 25 per 1000 and tuberculosis is a common disease.

At the session of the Society of Biology, held July 31st, LEFEVRE spoke of the action of the digestive fluids upon toxins. His experiments have shown that the virulence of a diphtheritic toxin is entirely destroyed by contact for

two or three days at the temperature of the body with a soluble pepsin in the presence of a weak acid.

CHARRIN mentioned similar experiments and called attention to the disadvantage under which chronic dyspeptics labor, as they are unable to nullify the action of certain toxins.

GUIRIAD stated that he had found upon various vegetables numerous colonies of coli bacilli of a deadly character at a time when an epidemic of typhoid fever existed. The most careful tests, however, failed to identify the germ found with Eberth's bacillus.

CHARRIN said that owing to the multitude of germs in the alimentary canal it is puerile to speak of the presence of a few more or less, but in cases in which bacteria present peculiarities such as increased virulence the question is altered. Such variations of virulence explain in a measure the occurrence of an epidemic.

At the session of the Academy of Science, held August 2d, GUINARD and TIXIER described experiments conducted by them to determine the nature of shock and its relation to anesthetics. Healthy and diseased dogs profoundly anesthetized were subjected to complete evisceration for varying lengths of time. The intestines were further subjected to traumatism of one sort and another while arterial tension and respiration were carefully observed. A fall in arterial tension, a slowing of the heart-beat and acceleration of respiration invariably followed. The three functions were differently affected in different dogs. The observers concluded that shock reveals itself by physiologic signs, which correspond exactly to well-known clinical symptoms; that evisceration produces conditions most favorable for the production of shock; that in an individual with a normal peritoneum and a sound heart, evisceration may be performed without danger if it does not continue for more than fifteen minutes; that in an individual whose peritoneum is abnormal evisceration is dangerous on account of the acuteness of the reflex action which follows.

Berlin.

THE GONOCOCCUS AND ITS TOXINS—BOTTINI'S OPERATION FOR PROSTATIC HYPERTROPHY.

WASSERMAN read a paper on the *Gonococcus and its Toxins* before the Medical Society, July 14th, which provoked a long discussion. The author has endeavored to simplify the culture of the gonococcus, and has succeeded in finding a medium in which it will grow, that may be sterilized, without becoming cloudy, by simply boiling it in a test-tube. For this purpose he employs a mixture of 15 c.cm. of pig-serum, 30 c.cm. of water, 2 c.cm. of glycerin, and 0.8 gram. of "nutrose," a sodiophosphate of casein. This mixture is sterilized by boiling two successive days, and is then ready for use upon plates after mixing it with ordinary two-per-cent. pepton-agar in equal proportions.

Experiments conducted by WASSERMAN led him to the conclusion that gonococci produced a most virulent poison, and that to this is due the muscular and rheumatic symptoms which follow an attack of gonorrhea, although no gonococci can be demonstrated in the affected parts. Furthermore, as this poison seems to exist for a long time

after the death of the germs, and as there seems to be no such thing as an acquired immunity for it, the reason is clear why so many women suffer for months or years from retained collections of pus of gonorrheal origin, even though these collections are sterile, as indeed they usually are. So confident was the reader of this, that he thought one justified in classing as gonorrheal, all such sterile pus collections, when it is possible to exclude tuberculosis; for streptococci and staphylococci continue for a much longer time in closed cavities than do gonococci. Indication for operation is none the less strong than it has been considered heretofore, as the lack of immunity and the long duration of the poison make it unwise to await the ultimate absorption of these toxic products.

LANDAU spoke of the fact that pus from a pelvic abscess, bacteriologically found to be sterile, will, if injected under the skin, cause an abscess. It is, therefore, not difficult to understand that, without new infection, a woman may from her old pyosalpinx have from time to time new attacks of pelvic peritonitis. Whether this effect is due to the persistent action of the toxins, or to the dissemination of a few cocci remaining alive in the walls of the tube, is not yet proved, but clinically it can make but little difference.

WERTHEIM said that he had obtained no reaction from the subcutaneous injection of the filtrate of a culture of gonococcus, while the injection of the unfiltered sterilized cultures produced a strong reaction in almost every case. He could not understand, however, how a poison could remain very long in the body without absorption taking place.

BUSCHKE injected a sterile filtered culture of gonococci into the urethra of three patients suffering from chronic gonorrhea, but in whom no cocci could be found. The effect in all was to produce a free purulent discharge, lasting some days, but in it no cocci were to be discovered.

LESSER said that it had been sufficiently proved that the inflammations occurring in joints and tendon-sheaths in connection with gonorrhea were caused by the cocci. He mentioned the remarkable case of Alman, in which for the first time gonococci were demonstrated in the blood of a man with gonorrheal arthritis. They were artificially cultivated, and the fifth generation was injected into the urethra of a man who had never had gonorrhea. This injection acted only too well, as the patient developed acute gonorrhea, and then rheumatism, with both joints and tendons affected, prostatitis and epididymitis, while the exudate from the tendon-sheath yielded a pure culture of the specific germ.

In closing the discussion WASSERMAN said that he did not intend to impart the idea that old gonorrheal abscesses were absolutely sterile, but that the number of germs present was quite out of proportion to the amount of disturbance in the pelvis; and that the germs being in the living walls of the tube could not be easily found in examinations of the contents of the tube.

FREUDENBERG showed a male patient, aged 63, who for over three years had not passed a drop of urine except through the catheter. Three years previously

both testicles were removed, but without beneficial result. On April 27, 1897, Bottini's operation of incision of the prostate by means of a galvanocautery was performed. Spontaneous urination took place within $5\frac{1}{2}$ hours; and in ten days he was able to empty the bladder almost entirely, and in a month he discarded the catheter. The urine, previously cloudy, became absolutely clear.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held October 5, 1897.

The President, B. SACHS, M.D., in the Chair.

DR. C. L. DANA presented a paper, entitled

A CONSIDERATION OF THE PARESTHETIC NEUROSES.

HE said that paresthesia includes nearly all the subjective sensations of the skin except those of pain. When these sensations fasten themselves to a particular part, as a nerve, they develop a definite picture, and are as much entitled to a distinctive name as is neuralgia. Sometimes paresthesia of the head cause sensations of burning, pressure, and cold, which are entirely comparable to headache. They affect the cerebrospinal nerves just as do neuralgias. The cephalic paresthesia are usually indicative of a lithemic condition. The most frequent causes of local paresthesia are those concerned with occupations. Women are affected more frequently than men. The feet and legs are most often the sites of the trouble; next in order the hands alone, and the hands and feet together. The nerves most frequently affected are the brachial and their branches. The most common form of paresthesia is a sensation of tingling or numbness; more rarely there is a sensation of heat. Among the rarest forms of paresthesia are sensations of cold which do not indicate an actual lowering of the temperature of the part, and which occur without any objective vascular changes. This form is not usually very distressing. The term "psychro-esthesia" was first applied by a French physician during 1836. Dr. Dana said that he had observed a number of these cases, of which the following are illustrations:

CASE I.—Female, had suffered from chronic tinnitus for three years, and had disease of both middle ears. She complained especially of a cold sensation which she had felt continually in the forehead for three years. The sensation was bilateral, and involved the upper part of the forehead. The skin was not cold to the touch, nor did it appear in any way abnormal. Examination revealed no anesthesia, and no signs of organic disease.

CASE II.—Male, fifty-six years of age. He was compelled to stand all day at his work. For a year and a half he had had some paresthesia of the lower part of the legs, and had also suffered from a distressing sensation of cold in the feet. The physical examination showed absolutely no anesthesia of the affected parts, and no change in vascularity. The reflexes were slightly exaggerated.

CASE III.—Male, forty-two years of age, whose previous history was negative. He complained of a sensation

of cold over the left thigh, particularly over its anterior surface. This sensation had been continuous during six months, and was increasing in severity. There were absolutely no objective signs over the affected part. The man was a dyspeptic.

None of the cases, the speaker said, was an example of beginning or terminal alcoholic neuritis, in which paresthesiæ are so common. He had noted particularly two classes of cold anesthetics, *viz.*: One, not definitely limited to certain areas, but involving the whole extremity or all four extremities; and the other, to which the name psychro-esthesia proper should be given. The former was associated with pain or vasomotor disturbance, and was due to irritation of the peripheral nerves; it indicated an abortive type of degenerative neuritis. Sensations of cold are very rare when neuritis is marked, as in alcoholic neuritis. Such diffuse sensations of cold also occurred in syringomyelia and in lesions of the central gray matter of the spinal cord. The second class represents a disease in which the patient exclusively suffers from a sensation of cold, there being no associated tingling or prickling. It is usually confined to a small area. These patients feel as though some cold object is lying upon the part. The sensations usually are of traumatic origin, and are associated with lithemia, and with the degenerative changes of middle life. In his experience, they had more often occurred among men than among women. Apparently, the cold paresthesiæ were not produced by lesions of any of the sensory neurons, that is, by any lesions above the spinal cord, nor did they seem to be produced by lesions of the spinal ganglia. The only two conditions in which cold sensations were found were: (1) lesions of the central gray matter, possibly involving the terminals of the first sensory neuron or the beginning of the second (*e.g.*, in beginning syringomyelia); and (2) in lesions of the peripheral sensory nerves. They must be due to lesions of the very terminal portions of the peripheral filaments. The pure types of psychro-esthesia he considers to be always due to irritation of the peripheral filaments, and that the cold paresthesiæ found in tabes and various lesions of the spinal cord are always mixed pains.

DR. WILLIAM H. THOMSON said that he had a case to report which was not in harmony with Dr. Dana's decision with reference to the central relations of psychro-esthesia. On March 7th, a gentleman, fifty-one years of age, had called upon him, stating that he had awakened the night before with a sensation of "universal numbness" over his right side. It involved the face, right arm, and legs, and the numbness was accompanied by a prickling sensation, and by a binding sensation just above the right knee. The pulse was 94 and of high tension; the artery was somewhat thickened; there was no real anesthesia to pain. There was a decided increase in the knee reflex on the right side. There was no aphasia or deviation of the tongue. His special complaint was a sense of coldness distributed over the shoulder and down the arm, involving the fingers and back of the hand, but more particularly the leg and foot. The urine did not show the presence of albumen or casts. The case was kept under observation until June 4th. At that time it

was noted that there was the same distribution of the cold sensation, except in the face. There was also a pronounced redness of the skin extending from the crest of the ilium to the knee, but quite as marked on the other extremity as on the affected side. The speaker said that the lateral distribution, involving the face, seemed to be an exception to the cases reported in the paper.

DR. GEORGE W. JACOBY thought Dr. Dana was right in ascribing many of the one-sided paresthesiæ to neuritic conditions, but he was of the opinion that the symmetric paresthesiæ are due to some general condition—one which exerts an influence upon the central gray matter of the spinal cord. This condition is usually a toxemia of some variety—quite commonly an auto-intoxication from the intestines. He had seen a number of examples of paresthesiæ resulting from the inordinate use of tobacco. In these cases there is a general feeling of heat extending down one or both arms, along the distribution of the ulnar nerve, and such a paresthesia is to him almost symptomatic of tobacco poisoning as the etiologic factor. Another characteristic paresthesia is a sensation of heat or tingling passing along the penis and into the scrotum; and a third is a paresthetic condition distributed along the inner part of the thigh, usually symmetrically. These three paresthesiæ he had very frequently observed in persons using tobacco to excess, and they had disappeared after its discontinuance.

DR. C. A. HERTER said that he had observed several instances of paresthesia of cold sensations in which the distribution was somewhat different from that mentioned in the paper. For example, he had twice met with paresthesia of the abdomen, and also of the chin. He agreed with the reader of the paper in ascribing most of these cases to peripheral irritation of nerves, but whether this irritation depends upon auto-intoxications is a matter about which we cannot speak very certainly as yet. In one of his cases there has been an actual lowering of the surface temperature of about one degree, as compared with the other side. He could not say whether or not this is a common feature.

DR. WILLIAM HIRSCH said that these cases are in all probability due to a peripheral lesion, or are cases which had developed as a result of chronic alcoholism. He had seen four cases (including one he had already presented to the society) in which trauma had acted as an exciting agent. One patient, while traveling, had carried another passenger upon his lap for a long time. Following this, he had developed a paresthesia of the thigh. Another patient, a sufferer from chronic alcoholism, had experienced trauma of the upper portion of the thigh. More than one of them had noticed on taking a hot bath, that the part complained of did not feel heat with the normal acuteness.

DR. FRAENKEL said that he had examined the sensory disturbances in tabetics, paying particular attention to temperature paresthesiæ. Out of thirty-six tabetics, only two had cold paresthesia. One complained constantly of a cold sensation of the back and legs; the other complained of cold paresthesia of the back part of the legs and the extensor surfaces of the upper extremities. The

general appearance of this patient was rather that of cerebrospinal syphilis, and the condition appeared to be the result of some meningitic pressure. There was no disturbance of the temperature sense in these cases. The last case he would explain by simple pressure on the posterior horns.

THE PRESIDENT said that he had seen a number of the special forms of pure paresthesia described in the paper. One case was that of a physician, thirty-five years of age, who had been moderate in his habits, yet ever since his student days had had a sensation of cold on the inner aspect of the left thigh. This was aggravated by severe exercise but not influenced by changes in the weather. The examination was entirely negative, and treatment had no effect. The speaker said that he had been particularly troubled with a class of cases with a persistent burning sensation in the heel. This is not affected by exercise, posture, or by treatment, either surgical or medical. He thought these cases are generally due to some lithemic or gouty condition; he had suspected otitis or periostitis in some instances.

DR. DANA, in closing the discussion, said that the more pure the cold paresthesia, the more sure one might be that it is a lesion of the peripheral nerves and terminal filaments. In some of his cases, similar to those described by the last speaker, there had originally been an eczema or some slight form of trauma, which had ultimately become a mere dermal hallucination. Regarding the case reported by Dr. Thomson, he said that it compelled him to admit that these paresthesiæ might be caused by central brain lesions as well as by peripheral lesions. He could confirm Dr. Jacobi's statements regarding the effect of tobacco, for he had seen obstinate and distressing paresthesiæ of the hand, which disappeared very promptly on giving up the use of tobacco. The authors that he had consulted had not made systematic observations of the temperature of the skin. In reply to Dr. Rockwell he would say that after pneumonia and typhoid fever he had only seen the general anesthetics such as are observed in the mild types of neuritis. He had had some experience with the troublesome cases of "burning heels," and had come to believe that many of them, at least, are due to a certain degree of traumatism, resulting, perhaps, in periostitis.

A CONSIDERATION OF FLECHSIG'S "GEHIRN UND SEELE."

DR. MARY PUTNAM JACOBI read a paper with this title. She said that in 1876 Flechsig had announced several laws—*e.g.*, the law of the organization of central nerve-fibers, and the principle of the systematic assumption of myelin sheaths by all of the nerve-fibers belonging to the same system; but now he claimed another law, *viz.*, that tracts of different functional significance ripen at different times, and that this is the keynote to the entire problem of the relations of brain and mind. The old "statue theory," enunciated as long ago as 1846, is evidently the key to the theory now under consideration. Flechsig divides the sensory system into three parts: (1) That which begins to be medullated at the eighth month;

(2) that which begins at nine months, and (3) that which does not commence until several months after birth. Observation has proved that all sensory tracts do not ripen at the same time—there is an interval of about four months between the period of medullization of the first division and that of the third. If sensory fibers are invariably medullated they must begin to functionate first, but data furnished by Flechsig himself has shown that medullization of many sensory fibers is anticipated by medullization of many motor tracts. We must believe, therefore, that the germ of function begins with the germ of structural growth, and that function does not suddenly make its appearance. The histologic details described by Flechsig lack sufficient support, and his philosophic conclusion is simply amazing. A sensation implies a central excitation of gray matter in the brain cortex; it does not precede consciousness, for it constitutes one of the phenomena of consciousness. There might be many nervous excitations of which the individual remains entirely unconscious, but an unconscious sensation is a contradiction in terms. An afferent neural impulse is not a sensation, but expresses one form of general susceptibility to external excitation. His theory involves the following postulates: (1) that sensations do not involve psychologic phenomena; (2) that the mental act proper always implies generalization from two or more sensations or memory residues of sensations, and (3) that this generalization is affected by propagation to an associative center, along ascending fibers of excitations originating in sensory centers lying on either side. The only plausible basis for Flechsig's theory is the indisputable fact that masses of gray matter in the human brain are intercalated between the cortical areas constituting the expansions of nerve tracts. In concluding, Dr. Jacobi expressed the belief that this theory of Flechsig's is but another futile attempt to demonstrate that the brain is the mirror, rather than the impression of the mind.

MR. MARSHALL said that psychologists looked with some doubt upon the positive statements made by many of the modern neurologists. It seemed rather startling that the neurologist pays little attention to psychology. He was certain if Flechsig had followed the development of modern psychology he could never have written the book under consideration. He agreed most heartily with all the criticisms presented by Dr. Jacobi. It is impossible to hold any such view of sensation as Flechsig apparently does. It cannot be looked upon as though existing alone—it is a part of the whole pulse of consciousness—a sort of "streak" in our conscious life. The whole mass of the consciousness of the moment must be taken into account. Sensation seems like the top of a wave, or a particular kind of increment to this mass of consciousness. Flechsig's position seems certainly to be determined by the old-fashioned view of the separation of the soul from the mind, but modern psychology considered consciousness only—the soul, the *ego*, which is a part of consciousness. Consciousness from a certain standpoint may be regarded as divided into the field of attention and the field of inattention. There is no absolute separation between the two. Stout, a recent author, dis-

tinguishes between moetic and amoetic consciousness, and the soul is a part, if not the whole, of this field of inattention. His own personal view is that the "empiric ego" is nothing more than the field of inattention to which the items of attention are added. Flechsig's view of association, also, is not in accord with modern doctrine, and the whole notion of association, as held in the early part of the century, is fast disappearing. The notion of the addition or summation or semichemic combination of sensations has been entirely dropped. Psychologists also look with some doubt upon the statement of the neurologists regarding a record in the cortex, for nothing in the consciousness gives any reason for believing this. The psychologist believes that it is impossible for any two successive stages of conscious life to be the same. Each addition to our psychic life changes the whole of it, and there is no such thing as the reduplication of any conscious phenomenon, so that the notion of "storage" and psychic residua or record in certain centers is not acceptable to the psychologist. Each added state changes the whole pulse of mental life; apparently the brain itself is altered as a whole.

DR. HIRSCH said that the attacks on Flechsig's theory had become exceedingly numerous. To his mind, the principal theory did not seem at all new; it simply consisted in dividing the psychic functions of the brain as such from the lower functions, *i.e.*, the different sense perceptions from the lower motor functions. The really new thing introduced by Flechsig's theory is the localization of these two functions to special areas of the brain. His reasons for such localization are: (1) the later development (as Flechsig claimed to have proved); and (2) that these purely psychic areas belong exclusively to the association system. If this could be proven, the whole theory will stand. The objections of H. Sachs of Breslau, are based upon some published pathologic cases. Among others, there was a case in which the whole occipital lobe and the part of the cortex which Flechsig claimed to be the entire perception center for vision, were destroyed. According to this theory, there should have been a degeneration of the optic coronary system, yet H. Sachs found this system intact, and he concluded, therefore, that this system must necessarily be in connection with other portions of the brain, and hence, that Flechsig has no right to claim that the parietal convolutions are association centers. The speaker said that he cannot accept this argument of H. Sachs. Any degeneration in the optic coronary system must be centripetal; hence, H. Sachs had no right to expect a centrifugal degeneration.

With regard to the differences of development, the speaker said that every other organ of the body is perfectly developed as regards function immediately at birth—*e.g.*, in the case of the heart or the kidneys—yet the brain of the new-born child is far different from that of an adult. Why should not this well-known gradual development of the brain have the anatomic basis assumed by Flechsig? He thought, with Flechsig, that there is a certain proportion between the time of medullization and the development of function. From a purely psychic point of view it seems that Flechsig's theory could

be sustained. The idea of the different localization of the intellectual power with what Flechsig called the function of the frontal center of localization is in full accord with our psychiatric experience. One portion, it is well known, could be diseased without intellectual impairment. This is seen every day in cases of melancholia. The anatomic part of Flechsig's theory is undoubtedly open to much criticism, but Flechsig had opened a new channel of investigation—a combination of anatomic and clinical research—which should make his theory welcome as an attempt which would, in time, bring great benefit to psychology.

DR. JOSEPH COLLINS said that if time permitted he thought he could show that the reader of the paper had not done Flechsig justice from a historic point of view. For instance, statements made more than twenty years ago should not be cited as reflecting that writer's state of mind to-day, especially when such statements are at variance with recent utterances. The essay "Gehirn und Seele" had been followed by a torrent of criticism, but many of the objections had been satisfactorily controverted in the author's later essay on cerebral localization. When this last essay was read at the congress at Zurich, psychologists in both Europe and America were very much in accord in the admission that it satisfied their ratiocination faculties at that time, and Baldwin of Princeton University, in his report of the paper to an American periodical, had no criticism to make against Flechsig's contentions save that they probably could not be accepted *in toto*. Flechsig's anatomic contentions have been cited in great detail by Van Gehuchten in the recent edition of his admirable work, and although he does not say in so many words that he is partisan to all of Flechsig's claims the space given to them in his book may be taken as an index of their importance in his mind. Other reputable anatomists and psychologists have corroborated many of Flechsig's claims, and it would, therefore, seem that the burden of proof to show the speciousness of Flechsig's contentions is very materially with his critics.

It could be shown that the localization of functions in certain areas of the brain, as stated by Flechsig, coincided exactly with the functions allocated to these parts by clinicians and physiologists the world over. The central visual representation is in the occipital lobes, especially the cuneus, an area to which it had been allotted long years ago by the labors of Seguin, Henschen, Wilbrand, and others. The "körpergefühl" area corresponds with the area which Dana had shown nearly a decade ago to be that in which tactile sensations are interpreted, and so on through the entire list of "centers." The same might be said of the association centers which Flechsig believes are intercalated, as it were, between the specialized areas, or the areas of specialized function.

Mr. Marshall had said that the notion of "storage" and of psychic residua or record, the result of the impingement of sensory stimuli on the brain, is not acceptable to the psychologist. The speaker was glad to hear that they are as critical in this respect as the clinician, for except as a colloquial expression it is not acceptable to the latter. Yet until a word can be found which will ex-

plain that the potentialities of a specialized area of the brain is changed by having given reception to a stimulus, whether the change be chemic, psychophytic, or purely psychic we shall have to make use of this term at its current value. Probably no one is ready to accept Flechsig's contentions *in toto*, but they are too important and too uniformly in accord with the teachings of anatomy, physiology, and psychology to be dismissed after a few minutes of scholastic indulgence.

THE PRESIDENT said that he had discussed this subject in an address delivered at Baltimore last May. He had always had unbounded confidence in anything published by Flechsig, and had gone at the task very seriously; yet he did not think that any one who had had any sort of training in psychology, philosophy, or logic could accept Flechsig's presentation of the subject. First of all, the evidence presented is insufficient. This deficiency has quite recently been acknowledged by one of Flechsig's ablest students. The theory of the coincidence of function with the development of the various medullated tracts seems to have been carried too far. If Flechsig's theory is correct on this point, why should speech-fibers be developed fully (as he said) at the third or fourth month of life? We are all agreed as to the extent of the somesthetic area, but his argument went further: Flechsig has taken almost the entire outlying districts and called them association *centers*, intellectual centers, not tracts. These centers, he said, simply connect the various areas of the brain, and connect sensory with motor areas. If true, the frontal lobe's chief function should be to combine the somesthetic area with the sensory speech area or tactile area. From our knowledge of tumors in the frontal lobe it is evident that there are other more important functions than could be assigned to it on the basis of Flechsig's theory. The latter seemed to him to be open to a number of serious objections which the speaker had stated in detail in the *American Journal of Insanity*.

DR. JACOBI, in closing the discussion, said that no one could doubt the position of Flechsig as an anatomist. It is not necessary to dispute what he has established anatomically; her object had been to show how much that was not anatomic he had added to pure anatomic facts. There is really very little foundation of fact for all his fanciful conclusions.

REVIEWS.

THE INTERNATIONAL MEDICAL ANNUAL AND PRACTITIONER'S INDEX: A Work of Reference for Medical Practitioners. New York: E. B. Treat, 1897.

THIS well-known annual, now in its fifteenth year, scarcely needs any comment at our hands. As in former years, the book is compact and reliable, and gives a careful and complete account of the progress in medicine and surgery. The illustrations, for the most part, are well selected, but we notice a few which might well have been omitted. The alphabetical arrangement makes the book of particular value to the busy physician; a very full index, as usual is added.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK for the year 1897.

THE present volume contains an extensive discussion on the relation of impure water to disease, participated in by the leading members of the Society. Its special relation to the causation of typhoid fever is thoroughly considered. There is a large array of valuable clinical papers, and the important executive work of this year's session is recorded in detail.

THERAPEUTIC HINTS.

Painless Application of Nitrate of Silver.—To the mucous or granulating surface apply first a solution of azotate of cocain which has an anesthetic effect equal to that of the hydrochlorate, and unlike the latter salt, does not form a precipitate with the silver solution. Following this a solution of nitrate of silver may be applied without giving rise to pain.

For Blepharitis Marginalis.—After the crusts have been completely removed with warm water, apply the following ointment:

R	Ichthyol	.	.	.	.	.	<i>m. v</i>
	Zinci oxid.	.	.	.	.	.	<i>gr. xl</i>
	Vaselin	.	.	.	.	<i>q.s.ad.</i>	<i>3 iv.</i>

M. Sig. Apply at bedtime.

Creosote for Constipation.—For this purpose the drug should be administered in drop doses, twice daily, after breakfast and dinner. It should not be prescribed in capsules or pearls, but should be taken in milk, beer, wine, etc. After a few days the dose should be gradually increased to *m.vii.* twice daily.

Vinegar as an Antidote to Carbolic Acid.—The following method is recommended for the treatment of carbolic-acid poisoning: Wash out the stomach with a solution containing equal parts of vinegar and water, and then with water alone. The patient may then be stimulated by means of a small quantity of whisky and milk, or with hypodermic injections of strychnin.

For Chronic Laryngitis.—

R	Argenti nitratis	.	.	.	<i>gr. ss-v</i>
	Aquæ destillatæ	.	.	.	<i>3 i.</i>

M. Sig. Apply locally by means of an atomizer.—*Ringer.*

For Atrophic Pharyngitis.—

R	Pilocarpinæ muriatis	.	.	.	<i>gr. ii</i>
	Aquæ	} aa	.	.	<i>3 i.</i>
	Glycerini		.	.	

M. Sig. A teaspoonful three times daily.—*Sajous.*

Apenta Water for Constipation.—Apenta water is strongly commended for chronic constipation due to atony of the bowel. It is said to have the advantage that its continued use does not give rise to further constipation. Increased activity of the bowels continues on those days on which Apenta is not taken. A wineglassful should be administered daily before breakfast. Its action is efficient, but not unpleasant.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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No. 19.

ORIGINAL ARTICLES.

WATER PURIFICATION HYGIENICALLY CONSIDERED.

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A FEW years ago the author, in various articles giving the results of experimental investigations on some of the subjects touched upon in these pages, felt bound to offer considerable evidence to prove that pure water is necessary to health, and that thousands of lives are yearly lost because of impure water.¹ Many epidemics due to a bad water supply have been reported at more or less length in the medical journals and in the daily papers, which reach all classes. Thousands or even hundreds of thousands of deaths from cholera have occurred in Asia, in the Orient, in Egypt, and in Europe. The recent epidemic in Hamburg (1892) is still vividly impressed upon the minds of those who give any thought to the question of water-borne diseases.

Fortunately the broad oceans safeguard us to a large extent against cholera and other Asiatic plagues; but here, as well as elsewhere, typhoid fever, not to speak of various lesser diarrheal disorders which are likewise communicated by impure drinking-waters, yearly causes thousands of deaths and many more cases of disease of varying degrees of severity. Even malaria is regarded by numerous intelligent physicians and other acute observers as presumably a water-borne disease, although the evidence offered does not suffice to prove that contention. Yet typhoid fever alone is a sufficiently grave peril to warrant an immense amount of agitation and the expenditure of many millions of money to prevent its occurrence. It is very well known that when the water-supply of any isolated household or of any community is naturally pure or adequately purified by artificial means, typhoid fever does not occur unless water be casually consumed from an impure source, or unless milk or other food, used in an uncooked condition, have come in contact with infected water, or unless the victims have acquired the disease directly from someone suffering from it. For all industrial and domestic purposes it is desirable that water be as pure as possible. Whether for "feeding"

a boiler or quenching thirst, for watering the streets or cleansing a wound, the purest water is the most satisfactory. The enlightened economist and the sanitarian insist upon this, and, even if space permitted, a citation of the volumes of facts and figures available to prove it would not be necessary for those familiar with the rudiments of modern sanitation.

What then is pure water, hygienically speaking? Briefly, it may be said to be clear, palatable, free from bacteria in large numbers, and wholly free from bacteria which can cause disease; it must contain no lead or other poisons, and have only a permissibly small amount of mineral salts. The salts of lime and magnesia, in a supply for general industrial and domestic use, must not be much in excess of 15 parts in 100,000 of water, otherwise it is too hard. The water of the best lakes and rivers may be less than one-half or even one-fourth as "hard" as this. It should be mentioned that the salts present in the water which we drink do not count for much in the total amount needed daily by the human body (nearly two ounces of salts being required), as that amount is abundantly supplied by a mixed diet. The daily amount of water swallowed by a healthy man averages about a gallon. This quantity of good natural water usually does not contain more than ten grains of salts, and a mineral water having one hundred grains of salts to the gallon is altogether too strong for large amounts of it to be tolerated. A slight proportion of lime is hygienically desirable in water-supplies, for it restricts the tendency of the water to act upon metals. A very soft water more readily takes up lead, for instance, from lead pipes in which it is conveyed. A very soft moorland water, especially if acid and well oxygenated, is more apt to cause lead-poisoning to develop than is the case with limy waters.

Clearness, to the uninstructed, seems to be the most important quality of a water, and yet the clearest water, particularly that of wells, often causes typhoid fever, for the causative bacteria of that disease are not detectable by the senses when they have been introduced into a supply. On the other hand, turbidity is not usually due to a dangerous cause, however unpleasant it may appear to the eye. Water may be perfectly wholesome, and yet so colored by harmless vegetable matter as to arouse distrust among those unfamiliar with it. Chemic tests of water are of most importance nowadays as aiding one to determine its mineral constituents. In studying a pro-

¹ During the last few years there has been furnished so much statistic and other testimony to this effect that it would require too much space to reproduce it here.

posed new supply, especially if it be from a peaty source, it is well to know its degree of solvent action upon lead, for it is quite expensive to construct and maintain the plant needed for counteracting such a tendency, by filtration through lime or by the suitable addition of lime or soda carbonates. Of the organic constituents, an undue quantity (more than .015 in 100,000 parts) of albuminoid ammonia is the important practical factor which aids us to determine whether a water is bad or not. Wanklyn, in his latest work on "Water Analysis," does not attach much importance to the presence of nitrates, although they are usually regarded as evidence against the purity of a water. The elaborate organic chemical testing of a sample of water is not of nearly as much hygienic value as a careful local inspection by a skilled hydrologist of the sources whence the water comes and a critical searching for possibilities of present or future contamination.

Chemistry, then, being an inadequate guide, except as regards the presence of metals and salts, can any degree of reliance be placed upon the revelations of the microscope as to whether a water contains or is likely to contain matters or organisms prejudicial to health? Not to any sufficient extent. Of course, if tapeworm eggs or partially digested meat fibers be detected in a sample of water, it evidently is polluted, and must be condemned; but it is hardly probable that such things, even if present, will be found to have come into the exceedingly small field of a microscope. Nor does the recognition of protozoa in water aid us hygienically, according to Neisser, who has made a special study of this subject. While a water rich in organic matter is likely to contain many micro-organisms, it may not have many protozoa. On the other hand, both bacteria and protozoa can thrive in water that is very pure indeed. Wash-water, sewage, privy-vaults, and manure-heaps are rather lacking in protozoa, although affording most unwholesome contaminations of drinking-water. Every leaf or blade of grass that falls into a well introduces more protozoa (*monadines*, *amebæ*, *ciliata*) than would human feces. Protozoa abound in hydrant water at all seasons.

During the last fifteen years an incontrovertible mass of evidence has accumulated to prove that when drinking-water causes cholera, typhoid fever, and other diseases it is because of the presence in the water of the bacteria peculiar to that disease. While heretofore none of the various methods in use have enabled us to always recognize with certainty the disease-producing bacteria which are present among the numerous microbes of harmless character always to be found in ordinary water, it seems as though we are on the threshold of important discoveries in this

direction. Even the familiar gelatin-culture method is of considerable value in the service of an expert, although local inspection is always of paramount importance.

The usual way to make the gelatin test is to add some of the water to strong, specially prepared, sterile bouillon made solid by the addition of gelatin, as explained in THE MEDICAL NEWS by the writer (April 27, 1889). This is done carefully after the gelatin is softened by gentle heat. Then the gelatin is allowed to "set," and in two days, more or less, the isolated bacteria of the original drop or more of water added, being diffused evenly throughout the mass of nutrient gelatin, will have increased enormously in that favorable medium. Accordingly, each separate one of the bacteria ($\frac{1}{10000}$ of an inch in size), although of itself visible only by the aid of high powers of the microscope, has, by multiplying to millions, formed a visible dot, cup, or other peculiar appearance separate from the others.

Without taking the necessary space to explain the many details of bacteriologic work which do not bear directly upon the subject of this paper, it may be briefly stated that, after years of discussion of the value of the mere counting of the number of bacteria present in a cubic centimeter of a carefully taken fresh sample of water, as a rule a water which has few bacteria is better than one which has many. The best waters have usually less than one hundred bacteria in each cubic centimeter (nearly one-fourth of a teaspoonful). Yet a large number of the organisms should not necessarily be considered as indicating that the water is unfit for use; and, on the other hand, disease bacteria entering a water which normally has few bacteria may produce serious infection. Of course, the species of bacteria present must be considered in forming an opinion. Elsner's method, consisting in using "potato gelatin" containing one per cent. of iodid of potash, promises to aid materially in the recognition of typhoid germs in water. For testing the efficacy of filters or other means of rendering an infected water fit to drink, the gelatin-culture test is all-important. It is the bacteria in such a water that the sanitarian regards as the element of danger. If the process removes all of these, it effectually purifies the water; and if it removes or destroys all but a minute proportion of these micro-organisms, it is safe to assume that practically all of the disease-producing germs, if any were present, have been removed. That the water produced is clear or palatable is, of course, readily determined by the senses.

In testing a filter in operation, the original water is examined from time to time by collecting average samples in heat-sterilized bottles. A cubic centi-

meter, or half as much, of a sample is taken in a sterile glass pipette and added to a cotton-plugged test-tube containing ten cubic centimeters of nutrient gelatin which has been softened by gentle warmth. After these are commingled the gelatin is poured upon a cool plate of sterile glass or a flat glass dish, and this is then promptly covered and labeled. Another test-tube of gelatin is treated in the same way, but is plugged with its sterile cotton as soon as the water is added. After mixing this in by gentle agitation, it is marked and laid upon its side so that the fluid gelatin and water reaches almost up to the cotton. Frequent samples of the filtered water are taken with care to prevent the entrance of bacteria from without. These are plated and tubed in the way just indicated, and all the plates and tubes are then kept away from dust and strong light, under identical conditions of free air, light, and moisture. Those in which the water introduced was sterile will show the gelatin unchanged even after a week, while those into which bacteria entered with the water will show a varying number of colonies corresponding to the number of bacteria entering. Usually those from filter-samples are of fewer varieties, even if—as in the case of low-grade or badly cared-for filters—greater in number than with the same amount of water from the raw supply.

Natural purification by slow flow through many feet of fine, porous earth produces water absolutely free from harmful or other bacteria which may have been in the water or on the surface where it fell. The majority of investigators find that, while bacteria abound on and very near the surface, they are greatly lessened a yard beneath the surface of the ground, and five or six feet deeper, in fine soil, none of these have penetrated. Accordingly, such ground-water, whether issuing as uncontaminated natural springs, or even obtained by properly constructed and protected wells, is very pure as regards bacteria, although it may have taken up a considerable amount of mineral matter. Water evaporated from oceans, lakes, and the top of the ground, and precipitated as rain, is then, like distilled water, very soft and pure, although that which first falls takes up some impurities from the air, especially near cities and from the roofs from which it is collected. In very many examinations made in various parts of this country the author, like others, has regularly found that brook-lets in unsettled regions have very few bacteria, and that larger streams and lakes supplied by springs and rainfall from watersheds which are uninhabited and untilled have, as a rule, few bacteria. But as human habitations and industries increase, the number of bacteria present also increases, and a river in an agricultural valley, even without sewage entering the

stream, has many more bacteria than a similar one in an uncultivated district under the same conditions of rainfall.

Communities which derive an abundant supply from the best of such upland sources, and which can preserve the watershed free from all permanent or temporary human contamination, have an ideal water-supply. Unfortunately, such pure supplies are altogether too few and do not increase, while the demand for water increases constantly, and must be met. Furthermore, supplies which were originally pure become contaminated. Thus, the necessity arises of purifying an inferior water so as to make it healthful and yet have an abundance for domestic and industrial purposes. The masses cannot or will not afford the outlay and trouble involved in using bottled waters when the public supply is bad. Neither is it found practicable to have a separate system of hydrants and pipes for a scanty pure supply when the main supply is unfit to drink.

If a water be regularly turbid and contains visible dirt, a general outcry for some process of treatment is much more likely to arise than when it is clear and palatable, yet containing the germs of infectious diseases. It is in the latter case that sanitarians find fault with the water. When turbid and colored with dirt and vegetable matter, there will occur numerous complaints from the users. If inspection of the watershed and the evidence of skilful bacteriologic examinations make it seem likely that dangerous contamination exists and cannot be checked or prevented in the future, then it is well to have recourse to filtration on a large scale. This renders the water more agreeable to the eye and the palate, while the process properly carried out removes nearly all the bacteria.

It is not easy to determine just how much dangerous contamination may be tolerated in a water without manifesting itself in the form of disease and death among those using the unpurified raw water. When a supply is condemned because obviously contaminated, the argument may be brought forward that the germs of cholera, typhoid, and other diseases tend to die out soon after entering a stream or body of water, and that that water purifies itself. It is true that something of the sort takes place. The writer studied this question¹ and found that dilution and sedimentation, the influence of light and oxygen (of the air), and also the antagonistic action of volatile acids in some river, and of the hardy water-bacteria present in all waters, especially in impure ones, contribute to the purification after contamination by the entrance of harmful bacteria with sewage or other filth. Yet if Elsner's test is employed, it is found

¹ *Trans. Amer. Soc. of Civ. Eng.*, February, 1891, and *American Journal of the Medical Sciences*, December, 1890.

that typhoid germs survive much longer and are much more prevalent than was formerly thought.¹ Accordingly, and in view of the seemingly small amount of infection causing some very serious epidemics, it is wisest in case of doubt to regard all filth contamination of water as dangerous. It is not safe to assert that all rivers of this country can "purify themselves" within twelve miles, as is often stated. Each case must be considered by itself, and judged independently. Yet it is difficult to convince municipal authorities of this necessity for pure water, and some of our cities have water supplies which may be classed as dilute sewage. As a consequence, thousands of cases of typhoid fever result among those drinking such impure water, and the disease is much more common among us than in the well-managed cities of Europe.

Recognizing to a certain extent the possible danger in drinking impure water, but also being influenced chiefly by its unpalatability or unpleasant appearance, intelligent people try to do something individually to purify the small amount used by their households. Straining the water through clean flannel or other dense substance, they find it clearer. If boiled, in addition, it is also free from any element of danger to those who drink it. And yet, prepared in this way, it has an unpleasant taste for one not used to it. This is because the two per cent., or less, of air in the natural water has been driven off by the boiling. If we restore this by forcing air through it by a bellows or by pouring the water several times from one pitcher to another, the taste is improved. The addition of a little cold tea, lemon juice, seltzer water, or other chosen savor, disguises the taste. But boiling, though the most generally available and reliable means of artificially purifying water, requires effort, especially when bottles or similar containers are used for holding the sterilized water, since they have to be kept clean. If the water be cooked in the bottles, this involves some breakage. When, therefore, a housekeeper is offered "pure, drinking-water guaranteed," for an outlay of 17 cents, which purchases a "self-cleaning water-filter" which has embossed in large letters upon its nicked metal case the pretentious words, "germ-proof filter," the temptation is strong to employ such a means of improving the domestic supply. These quoted words are from the printed advertisement of one of the large department-stores of this city. The filter, unfortunately, does not purify the water as claimed, although it strains out coarse dirt and makes dirty water somewhat clearer. It is as valuable as any of the ordinary filters, and is perhaps least likely of all of these to become a source of infection by serving

as a breeding-ground for bacteria. It is filled with crushed quartz held in place by two wire screens. Screwed upon a faucet, when clean, it allows a considerable flow of water. Soon, however, the flow is obstructed by the accumulated dirt. If then, such a filter be reversed and the other end be screwed upon the faucet, the coarser dirt is washed out and also much of the finer. Yet considerable fine dirt and, among other things, many bacteria remain attached to the sand. Boiling kills these, but if this be omitted, and the filter allowed to remain unused for some hours, as over night, at ordinary room temperatures, the adherent bacteria will have increased by multiplication in the organic matter present. Accordingly, the first flow of water from the faucet after such disuse of the filter will contain many more bacteria if it flow through the filter than if the filter were not used. The number lessens gradually as the water continues running.

This serves as a type of all ordinary domestic filters, in which class is included for brevity all, whether straining water from a faucet or from a jar, or other receptacle under gentle pressure, and in which the straining substance is not very dense. In THE MEDICAL NEWS for April 27, 1889, the writer reported the results of prolonged experiments upon very many filters made of the various substances used for the purpose, and since that time he has tested every kind on the market. Nearly every permeable substance has been called into requisition by inventors in this line, such as cotton felt, wood felt, wood pulp, wood, cloth, sponge paper, chaff, wire gauze, charcoal, carbon, polarite, spongy iron, porous porcelain, porous stone, and mineral substances of varying composition in a natural or prepared state, asbestos, and simple sand. As a rule, these are the products of wholly untrained minds quite unfamiliar with the principles underlying successful filtration. Now and then there comes a new variation upon, or an independent application, of some previous idea. The study above indicated, showed that except in so far as it is intended to be a mere strainer of more or less of the visible dirt, the essential virtue of a filtering substance is fineness of structure such as will hold back all bacteria under ordinary conditions of usage for a day or more. If not of such dense material, it is merely of service as a strainer through which bacteria can pass, however well the water is cleared up, and in which they can increase to such an extent that the water flowing from them has more bacteria than that which they are supposed to purify.

This element of bacterial contamination from the filter itself varies with the kind used, and of course disappears for a brief time after the filter is sterilized,

¹ *New York Medical Journal*, April 10, 1897.

as by boiling. Accordingly, such imperfect filters should be simple in construction, commodious, easy to cleanse, and not destructible by frequent boiling. As to their capacity for holding back bacteria, that varies with the density of the filtering substance and its strength and durability. If it tears readily and allows holes or fissures to form, bacteria can of course pass through such breaches of continuity. The simplest and most permeable kind—the sand filter or, rather, strainer above described—holds back so few bacteria as to be practically worthless in this respect. A dense, freshly sterilized flannel bag upon a faucet or a folded filter paper (or even a plug of absorbent cotton) in a funnel does rather better work. Carbon blocks and wood pulp hold back a considerably larger percentage, but allow disease bacteria to pass through and also to increase in the porous filtering mass. Porous stone is still more efficient and when of the finest quality will hold back larger and medium-sized bacteria, such as the germs of cholera and typhoid fever, for many hours. It renders some turbid, silty waters very clear. While the best of these, frequently sterilized by chemicals or by boiling, can be employed by an expert with safety, they are not to be recommended for ordinary use in time of epidemics or when the water filtered is regularly infected, unless it has always been cleaned and boiled a few hours after it has first been used after a previous boiling. This is a requirement which the masses will not observe. So long as a filter renders water clearer, they allow it to strain their drinking-water, regardless of the possibility of bacteria passing through. Asbestos, in carefully arranged sheets, is employed for filters, some of which display great mechanical excellence. This can be made to yield better results than any ordinary filter, although inferior to the best; but the weakness of the tissue, the bulkiness or complexity of the efficient filters of this substance, and the difficulty of cleansing them, militate against their adoption, although some may be sterilized by baking. Porous porcelain of coarse texture, such as is used in electric-battery cups, is much like porous stone, holding back bacteria for a brief time, but is quite inferior to finely porous porcelain as used in the most efficient filters.

These second-rate substances are bacterially efficient, in proportion to the minuteness of their largest pores and in inverse ratio to the pressure with which the water is supplied. The densest offer the greatest resistance to bacteria and also to water. A corollary of this is the fact that a thoroughly efficient filter cannot be very rapid, and when a given filter yields water much more rapidly than another having the same surface exposed to the crude water, the former is less capable of separating bacteria. Both being

under the same conditions, the less rapid yields water freer of germs than the other. And yet the slowest filters are not necessarily in all cases the most efficient, as when, for instance, the slowness is due to a thick mass of fibers or granules which cannot altogether prevent bacteria from getting through, and which, in consequence, must allow them to increase prodigiously in the dirty mass. In no case is slowness a merit, but, because of exhausting the patience of those who use a filter, is to be lessened as much as is consistent with practical retention of "germ-proof" quality.

The only filtering substances which can safely be recommended for household or other use on a small scale, is (1) fine, dense, porous porcelain of standard make and uniform quality tested by the maker; and (2) the prepared infusorial earth cylinders which carry the trade name of Berkefeld. The latter remain germ-proof for a shorter time than the best of the former class—of which the "Pasteur" filter cylinders may be taken as a type (Fig. 1), yet they

FIG. 1.



Pasteur-Chamberland filter tubes. Portion of wall of upper one removed.

are within the limit of safety if cleaned and sterilized (by boiling) daily. They have the great merit of comparatively rapid flow, and are less likely to become broken than the French tubes. Both of the two specified are expensive, being patented articles of foreign manufacture. There are several patterns of filters using excellent porcelain material but made in this country at Trenton and elsewhere. Specimens tested by the writer were quite as good in germ-proof quality and flow as the material of the Pasteur filters. This he has proved by the most rigorous tests carried on in one instance for eight weeks of unintermitting flow, during which time no bacteria came through.

The "Pasteur" filter is also, and more properly, designated by the name of Chamberland, who first exploited this valuable material, taking out a Belgian patent (No. 69,095) for the exclusive right of using rebaked porous porcelain for filtration. A German patent, antedating this, and a French one dated eighteen months later, might be interpreted as indicating that Chamberland attached importance to the principle of filling with charcoal the space within the metallic casing outside of the porous cylinder. This idea was not utilized by the producers, although in a less popular competitor (Mallié filter, patented in

February, 1895) are used flat plates of similar porous porcelain outside of which are corresponding plates of carbon to intercept dirt and prevent speedy clogging of the porcelain by turbid water. Before knowing of Mr. Chamberland's idea, the writer had suggested the same expedient for use with muddy water.

For the Chamberland-Pasteur tubes, semivitrified porcelain is ground up and used in the preparation of the finest product, to give greater porosity. Finely ground silica answers the same purpose, yet if any but the smallest sand-grains are used, it is considered by the makers that the resistance to bacteria is likely to prove insufficient. Some of the best porous porcelain produced in this country seems to be composed of from fifty-five to seventy per cent. of finely ground silex, with between forty-five and seventy per cent. of kaolin clay. This porcelain is quite inexpensive, fairly durable, and as germ-proof as the best French product. The German patent, No. 19,589 (January, 1882), covers the preparation of a similar porous filtering material, as is also the case with the English patents of Bagshaw (1834), Roberts (1859), and Joseph (1870). Yet it is doubtful whether the products were fine enough to be germ-proof. It was not until 1871 that it was definitely recognized that porous porcelain of the proper sort could remove all bacteria from liquids. This was discovered and utilized by Tiegel, a Swiss pupil of Klebs. About the same time Zahn employed clay cells for the same purpose. In the same way Hiller (1874 or earlier), Panum, and others, as well as Sanderson (1878), utilized porous porcelain. In France, Arloing, Toussaint, and others achieved the same result as Tiegel by using plaster with or without the admixture of asbestos for strengthening the texture. Pasteur, in 1877, used this also, abandoning it later for rebaked porcelain. The admirably adapted cylinder shape still used in the Pasteur filter is due to Chamberland, although somewhat similar patterns had been illustrated in publications previous to his time. The efficacy of rebaked porcelain was announced by him in 1884, through Bouley.¹ While formerly made of two degrees of porosity, the output sold here is now of only one uniform density.

This substance, thus gradually evolved, has never been improved upon as regards permanency of germ-proof quality. A perfect cylinder will remain impermeable to bacteria for days and even weeks, allowing water to flow through in a slow stream or in drops, until the silt and other things carried by the crude water choke up the interstices on the surface. This extreme slowness, increasing with use, is a serious drawback, which, like the brittleness, renders it less popular than its admirable filtering property

would otherwise make it. A cracked or flawy cylinder should be discarded, like a broken one. The frequency of mishaps with ordinary careless handling and cooking for the purpose of sterilizing make the Pasteur filter too expensive for the masses, since a new cylinder is retailed for three or more times as much here as in France. There the writer has bought them for about thirty cents. A cylinder which has deteriorated by weeks or months of use, but which is not cracked, can be renovated; yet the ordinary cook cannot be trusted to do this. Careful baking of cleaned and dried cylinders at the high temperature of nearly 300° C. (572° F.) will make the porcelain nearly as efficient as when new. This heat, of course, completely sterilizes the cylinders at the same time. They should be allowed to cool gradually. Another method is to use chemicals. The tubes are well cleaned and then inverted to drain out for fifteen minutes or more. Then, outlet upward, they are filled with, and soaked for at least fifteen minutes in, a twenty-per-cent. lukewarm solution of pure chlorid of lime (or Labarraque's solution or *eau de Javelle* with twice its volume of water). Thereby the albuminoid and mineral deposits in the pores are disorganized. Next they are emptied and then filled with, and lie for another quarter of an hour in, hydrochloric acid diluted with four or five times its volume of water. After this they are emptied and rinsed with boiled water. Another means of sterilizing and regenerating them is to employ similarly, and for twice as long a time, a 1-150 solution of permanganate of potash, followed by a five-per-cent. solution of bisulphite of soda. Very dilute hydrochloric acid tends to prevent the deposition of manganic bioxid in the pores. To detect flaws or other imperfections, the manufacturers of good porcelain filters moisten the substance and then apply air-pressure of at least seven pounds. Those which allow air to pass are rejected. The test is very easy for any one to make by means of a small air-pump.

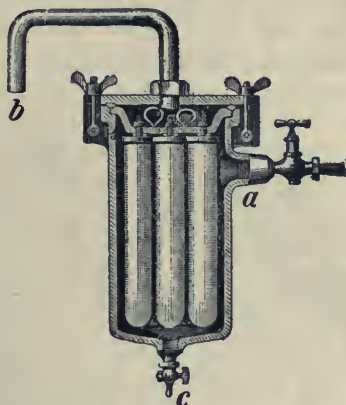
After a few days, or at any rate a week of use, such a filter-cylinder needs to be removed, brushed off, and rinsed. Then it should be boiled gently for half an hour and allowed to cool gradually before replacing in its casing. This is because not even the best filter-substance is germ-proof for an indefinite length of time. Until nearly a decade ago they were regarded as absolutely germ-proof, and even later than that some observers, presumably after inadequate tests, have said that these porous porcelain surfaces allowed no bacteria to get through. In 1888, by a series of thorough tests and checks thereon, made at the Carnegie Laboratory in New York, the author found that, even when the filters were kept cool and when only cold water was used,

¹ *Comptes Rendus. Acad. des Sciences*, August 4, p. 247.

bacteria passed through soon after the end of the second week of constant usage; so that in time many more were in the filtered than in the unfiltered water. Pasteur cylinders used for the purpose were of the pattern sold at present, and of the best quality, having been purchased by the writer in Paris, of the principal agency, and represented by the seller as perfect. The results of those experiments were accepted, and have since been confirmed by other investigators. Disease-bacteria can grow through this substance in laboratory experiments where everything is arranged to favor the growth; but it has not yet been shown that this can occur under ordinary household conditions of usage of tightly fixed, perfect cylinders washed and sterilized by boiling at least once every week.

These filters possess, then, a high degree of efficiency as regards the removal of bacteria, and whatever has been said above regarding the efficacy of

FIG. 2.



Battery of filters of the Berkefeld pattern. *a*, inflow; *b*, outflow.

one well-known pattern applies equally to all filters properly constructed of the best porous porcelain. As already stated, American porcelain stands the severest bacteriologic test as well as does the imported material. There seems no inherent reason why all of these should not be fairly good if only made with proper care. It must be borne in mind, however, that when of small surface they cannot be rapid and at the same time germ-proof for any considerable length of time.

When "batteries" are arranged by connecting a few or many of the separate porcelain tubes, of the Pasteur type, or of similar styles, to an outflow pipe by very tight joints, correspondingly increased quantities of pure drinking-water can be obtained from them. These multiple arrangements do not prove quite so "germ-proof" as the simple tubes securely fixed each in its separate metal casing, yet in an institution where a physician, or other person, trained in simple bacterial methods, constantly su-

pervises the arrangement, the cleansing and necessary renewals, and also regularly tests the yield, very bad water can be rendered wholesome by such means. This is proved from the reports of the French Minister of War, based on the prolonged and systematic use of these filters in French garrisons, resulting in a reduction of the typhoid death-rate from one to ten per cent. of what it formerly was, and the cases occurring are said to be nearly always explainable by the use of the ordinary or some outside supply in an unfiltered state. As a point in favor of these and against inferior filters, it is stated that in the British army in India, where charcoal and sand-filters have been used, the number of deaths from typhoid fever has steadily increased since 1884. Such filters are worse than none. Outside of garrisons, military use of porcelain filters proves, with or without the André cleaner and infusorial earth powder, to be unsatisfactory, notably in campaigns where the foulness and pestilential quality of the only waters obtainable make an adequate purifier absolutely necessary. However brilliant the laboratory and exposition results, the military filters failed under the conditions of practical usage. Barthélémy, and also Molinier,¹ very forcibly pictured the inadequacy of these. The best pattern among military filters is called "*filter de campagne*," has fifteen filtering cylinders, and weighs 110 pounds or more.

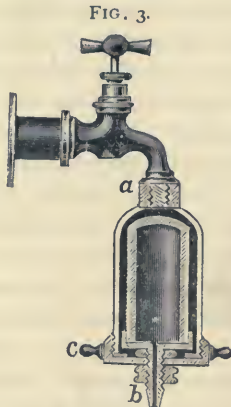
For use in households where no hydrant water or other piped supply exists, yet where filtration of the drinking water seems necessary, the writer would suggest that some manufacturer introduce circular plates of this germ-proof porous porcelain, perhaps slightly convex on the lower surface, in order that the water might drop only from the center of the plate. This could be held to the necessary cylinder or section of pipe above, and to which it will form a bottom, by screw-clamps pressing it tightly against an intervening rubber ring on the periphery. Although such a plate would filter very slowly, it could be very easily cleaned and boiled. Porous stone of similar pattern is used, but is unsatisfactory, not being germ-proof, although it clears turbid water. Being cemented into the lower rim of the jar above, it cannot well be sterilized. There are various patterns of non-pressure filter metal jars using several porcelain tubes inserted in holes in the bottom. Siphoning arrangements may also be employed. The yield is often contaminated.

The porcelain tube-filters, as also those of the material about to be mentioned, may be used with a union-joint or two-way water-cock. The cumbrously long Pasteur filter is thus rendered more convenient for ordinary sinks, yet the writer prefers the older

¹ *Archives de Médecine, Navale et Coloniale*, 1893 and 1894.

patterns in which the water flows directly downward out of the porcelain cylinder into jars or other receptacles, even though that necessitates a special faucet reserved for the use of this filter. In the case of a specially introduced piping the water should come through iron instead of lead, or a block-tin pipe could be used at twice the price of lead pipe.

A successful rival to the above filter is presented by the (Nordtmeyer) Berkefeld pattern which is similar in shape and mechanism, but which is many times faster, yielding when clean and freshly boiled nearly a quart of germ-free water in a minute from the smallest domestic model. The porous filtering cylinder is only three inches in length. Closed, like the porcelain cylinders, at one end, the open end is firmly cemented into a flattened, metal funnel having a small central outflow tube, by the outside of which it is screwed tightly inside its metal casing. (See Fig. 3.) No breakable part is exposed when the fil-



Berkefeld filter.

ter is attached to a faucet. The household pattern, illustrated here, is so compact that it can be attached to a kitchen faucet and yet allow a jar or pitcher to be placed beneath to catch the filtered water. Its comparatively rapid yield is due to its extreme porosity. The short porous cylinders or cups have walls more than half an inch thick, and are composed chiefly of infusorial earth appearing under the microscope as compressed diatoms (fossil bone-meal) held together by a secret process. They cost \$1.50 each, and are more durable than porcelain. The general rule above given, that with increased yield the germ-proof quality is lessened, holds good with these as with other filters, yet they hold back bacteria long enough to render them safe if sterilized by boiling every day or two. The writer, who has tested a number of these during the past two years, has not found one that could not hold back all bacteria for one day. In some experiments, under various conditions of practical usage and with a pressure as high as thirty-eight pounds, when the filters were

kept cool (10° - 12° C.) during an intermittent yield of more than five gallons daily, they produced sterile water until the eighth day.

From the results of many tests, it may be stated briefly that the Berkefeld filter will hold back all bacteria from one to three days. We can safely recommend them, therefore, even for use with infected waters, on the condition that the porous filtering cup be taken out daily, and cleaned and then sterilized by boiling for half an hour. The water should not be very warm when they are put into the clean vessel in which they are to be boiled and should be allowed to cool enough to be endurable by the hand when they are taken out. When greatly thinned by repeated brushing or whenever a flaw develops in a porous cup, it should be discarded. It is advisable to have an extra tube on hand, although a single tube can be used for many months. The filtering substance lasts longest if not brushed roughly, but rather cleansed by means of pieces of cloth under a flow of water upon the cup. They do not break by gentle boiling, with little or no ebullition, even if for convenience they be thus sterilized in the same clean vessel in which other things—such as nursing-bottles—are cooked; yet rough handling breaks them. As with porcelain tubes of different makes, when the water is not supplied under pressure, these can be arranged to work with various forms of portable or fixed pumps, singly or in batteries. A single tube thus arranged weighs, with pump and portable stand, eleven pounds, and yields a gallon in two minutes. At least one extra tube should be at hand and also a vessel for the daily boiling, which must not be omitted. For bottling establishments and other users of large amounts of clear waters, batteries of these tubes are successfully used. One of fifteen tubes freshly cleaned and boiled yields seven gallons of sterile water per minute under a hydrant pressure of forty pounds. Testing such a filter under a lower pressure (East 42d St., New York), the writer found the water quite free from bacteria, the very few that were present probably coming from the unsterilized hose pipe used for conducting the outflow. The water was as pure as that from any mechanical filter which the writer has examined. Yet stress must always be laid upon the importance of frequent boiling of such tubes. Reliance must not be put upon the employment of automatic means of cleansing them by the use of powdered infusorial earth to the neglect of boiling several times a week, although bottlers are apt to disregard such injunctions. In a carefully managed hospital or institution under proper scientific medical control these battery filters can produce water entirely free from germs.

All things considered, the simple form of the

short-cylindrical Berkefeld filter is to be recommended as the best for household use when there is a hydrant supply needing filtration, but it must be repeatedly emphasized that frequent boiling of the porous cup is essential to perfect results. While thus commending this filter, the writer would not disparage the best porcelain filters. In his own residence, both kinds are in regular use and both yield sterile, wholesome water.

As compared with the use of these germ-proof filters by the few intelligent people who will regularly give them the requisite amount of care (in itself very trivial, but yet indispensable) any other filtration of drinking-water is inferior. Even the best gravity-filters are not perfect and yet they are in every respect better for a city than the individual use of any ordinary domestic filter; for most every pattern in the market is worse than none and vastly inferior to the employment of boiling for purifying water at the time of an epidemic.

(To be continued.)

THE TREATMENT OF ABORTION.

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THE Century Dictionary says that a somewhat useless distinction has sometimes been drawn between abortion and miscarriage, by which the former is made to refer to a termination of pregnancy during the first four months, and the latter to the following three months. According to the same authority, the terms miscarriage and abortion are applicable to a premature ending of pregnancy at any time before the end of the seventh month. In my opinion this distinction is useless. If employed as a basis for therapeutic indications, it is dangerous and should be abandoned. To place a landmark at the end of the fourth month of uterogestation is probably a relic of olden times, when the theory prevailed that the fetal life did not begin until the mother became conscious of the child's movements, the so-called quickening. Many women regard it as a comparatively slight offense to take measures causing the interruption of pregnancy before the child is supposed to be viable, while possessing the idea that the same act committed at a later period is something akin to infanticide. From a physiologic standpoint, fetal life begins the moment of the junction of the male and the female elements.

Other authorities, *e. g.*, Foster's Medical Dictionary, limit the period during which abortion may occur, in a stricter sense, to three months. This is better, since it has reference to the completion of the placenta. In a general way it may be said that at the

end of three months there is a well-developed placenta, but its formation is gradual, and, like most other vital processes, is to some extent subject to individual variations. Some time between the middle of the third and the middle of the fourth month, the ovum loses the chorionic villi with which it is covered at a previous period and becomes smooth, except over the area where the villi grow into the decidua, and together form the placenta. From this it follows that the treatment which will be advocated in these pages is indicated at any time, not only during the third, but even during the second month. I am, therefore, not in favor of establishing a difference between abortion and miscarriage. Both terms may be used to express an interruption of gestation at any period previous to the viability of the fetus.

In regard to the use of the terms abortion and premature labor, I do not approve of the period of seven months as a landmark to be employed in discriminating between them. Since many infants may be reared when pregnancy terminates as early as at the end of the sixth month, this is the time after which abortion is no longer possible, and indicates the natural and proper use of the terms abortion and premature labor. From the end of the fifth month of pregnancy the child may be born alive, inasmuch as its circulation is maintained independently of the maternal organism, and its muscles evidence contractility; but at this early period it is not viable. If the placenta is expelled spontaneously, or is expressed by Credé's method, as is often possible at this stage, the case should be regarded as one of premature labor, and the treatment for abortion is not indicated.

During an extensive experience in obstetrics and gynecology, I have observed a large number of abortions at every stage, and my clinical notes, which form the exclusive basis of this paper, lead me to think that abortion is most frequently observed during the third month of gestation, and with diminishing frequency during the second, fourth, and fifth months. As to the first and second months, I do not doubt that many abortions occur which do not come under medical observation, and sometimes without the knowledge of the patient. I have thus accidentally observed an abortion at the end of the second week which was entirely deprived of subjective symptoms. On the other hand, I have seen dangerous hemorrhage coincident with abortion at the end of the first month which, without proper treatment, might have ended fatally. Many menstrual irregularities in recently married women are probably due to pregnancy and its untimely interruption.

By far the most common symptom of threatened abortion is hemorrhage from the uterus. When abor-

tion actually occurs, clots are discharged, and in some cases this is all that will be observed. In others the entire ovum, or portions of it, or even the fetus itself, is discharged. The loss of blood may be so considerable that the patient becomes faint, loses consciousness, or even dies. The hemorrhage may be protracted over days, weeks, and even months, and in such cases, even though moderate, it weakens the patient to a greater or less degree.

In most cases there is some pain, which is described as being cramp-like, and indicates painful contractions of the uterus. Backache is also a common symptom. Often there are nausea and vomiting. Among rare symptoms I have observed stiffness of the lower jaw, which means a beginning tetanus.

On vaginal examination the uterus will be found changed in size, consistency, and shape, according to the stage of pregnancy reached before the occurrence of abortion. As a rule, the os is more or less patulous, sometimes to a degree sufficient to admit a finger. Often the ovum may be felt projecting from the os, or if the fetus has been expelled the torn umbilical cord may be found. In other cases the os is closed. If the fetus is macerated, offensive purulent discharge may be observed to come from the interior of the uterus. If general septicemia has developed the pulse will be small and rapid, and sometimes the temperature will be elevated. Under such circumstances there may be present weakness, nausea, vomiting, and a yellowish color of the face. In such a case I have seen repeated epistaxis and the development of a retro-uterine hematocoele, which finally led to a fatal termination.

At the normal end of pregnancy, and even in premature labor, the ovum separates from the uterine wall, leaving only a layer of cells which serve for the reproduction of the endometrium, and therefore interference is not usually indicated. I do not even employ an intra-uterine or vaginal injection. On Braune's¹ beautiful plate representing a section of the frozen body of a woman at the end of the eighth week of pregnancy, the decidua in the lower part of the uterine cavity is a centimeter in thickness, and its cut surface is twice as thick as that of the chorion. Usually the decidua vera is the last portion of the products of conception that is expelled, and the process of discharge may require weeks or even months before it is complete, the uterine contractions being too weak to expel what is now a foreign body; it must remain until disintegrated and removed in small shreds as a constituent of the lochial discharge. During this time the patient is exposed to the dangers of hemorrhage and septicemia.

In very early pregnancy the entire ovum may be expelled at once, and the remaining decidua be so insignificant that it will take care of itself. At best the reflexa may be discharged with the ovum, the vera remaining. In the plate above mentioned may be seen an accumulation of blood between the chorion and the reflexa. During abortion the blood, by increasing in quantity, will gradually separate the ovum from the reflexa, and the former may be expelled, leaving both the vera and torn reflexa behind. Sometimes there may be a fetus in the discharged products; in other cases we find only a deformed mass, even when the ovum is expelled entire. Again, in other instances, only the fetus will be thrown off, and the remaining conception products remain in the uterus.

The prognosis in any case of abortion is doubtful. If rational treatment has been instituted, the prognosis is good. I have never observed a fatal termination when I have been able to direct the treatment from the beginning. If left to itself or improperly treated, abortion is a dangerous accident which often ends fatally, usually from the occurrence of hemorrhage or septicemia. More women die from abortion than from childbirth, even if the bungling operations of professional abortionists are not considered.

The treatment may be prophylactic or curative. The former is especially called for in cases of habitual abortion, in which a history of syphilis is so frequently elicited, and by instituting specific treatment of the husband, the wife, or both, it may be possible for pregnancy to be completed. It may be necessary for the patient to change her occupation or location of residence, especially if the latter should be in a malarious district. Sometimes a uterine displacement exists which may be remedied before pregnancy occurs. If no such indications are found, I have sometimes succeeded in preventing abortion by having the patient remain in bed during the week corresponding to what would be a menstrual period if pregnancy had not occurred. Confinement to the bed should continue from two days before menstruation would be due under non-pregnant circumstances to five days after. At the same time a teaspoonful of fluid extract of *viburnum prunifolium* should be administered three times a day. During the remaining three weeks moderate exercise in the open air is indicated, and at the same time iron, quinin, red bone-marrow, arsenic, and phosphorus may be given with benefit. In my opinion, this is a better plan than forced and complete rest during the whole of pregnancy, which treatment is very weakening and may assist in the causation of abortion or make the patient less fit for the ordeal of childbirth. Coition,

¹ Wilhelm Braune, "Topographisch anatomischer Atlas," Leipzig, 1875; plate No. 11.

dancing, horseback riding, bicycling, gymnastics, and all sorts of sports or fatiguing work must be absolutely forbidden.

If abortion threatens, as indicated by loss of blood from the uterus, it becomes necessary to decide if further prophylactic measures are advisable. Under these circumstances it is often possible to prevent abortion by means of complete rest and the administration of *viburnum prunifolium*, opium suppositories, a saline, and the application of an ice-bag to the hypogastrium. If hemorrhage is considerable or has continued long, if the cervical canal is open, if the ovum is felt projecting into the vagina, abortion is inevitable, and then the sooner the uterus is emptied the better it will be for the patient.

The old treatment, consisting in vaginal injections of ice-water tamponade and removal of the ovum, exposes the patient to great danger, and at best leads to a tedious recovery. I very rarely use a tamponade. The indications for its use are only when there is great weakness, necessitating a better general condition of the patient before having recourse to operative interference, and also when, on account of unfavorable surroundings, it is wise to remove the patient to a hospital.

In many (even new) books the use of tents for producing dilatation of the cervical canal is recommended. I am opposed to the employment of any kind of tent except that, if it is deemed necessary for other reasons to tampon, I use iodoform gauze in the upper part of the vagina, and introduce a portion of the gauze into the cervical canal. If immediate dilatation is necessary it is, in my opinion, much better to use either the expanding or coniform dilators. If a tampon is used, only the portion which is placed in the upper part of the vagina should be composed of iodoform gauze. The portion of the tampon in the lower part of the vagina should be made of pledgets of absorbent cotton wrung out of a one-per-cent. creolin emulsion, and should be inserted with the aid of a Sims' speculum, and so tightly packed that it effectively prevents any loss of blood.

In most cases it is my practice to dilate the cervical canal instrumentally. For abortion occurring during the first three months of pregnancy, all that is required for this purpose is a set of conical, hard-rubber dilators, or a dilator embodying the principle of a glove-stretcher. During the fourth and fifth months a higher degree of dilatation is required, and for this purpose I employ a set of olive-shaped hard-rubber dilators. The set consists of ten olives, ranging in circumference from 33 to 68 mm. At a later date of pregnancy Hanks' large dilators, ranging from 73 to 137 mm., are very useful. When

the necessary degree of dilatation has been effected, the uterine cavity may be emptied. Much less violence is required in introducing dilators than in forcing a finger through a closed os, as has been recommended.

For the purpose of emptying the uterus, Thomas' small dull wire-curette is useless, and may lead the operator into an erroneous belief that the cavity is empty. On the other hand, his large dull wire curette, with an opening admitting the tip of a forefinger, is an admirable instrument for the purpose of both loosening the ovum from the walls of the uterus and removing it by seizing it between the instrument and the index-finger, as well as for scraping off the decidua vera. Formidable as the instrument appears, I have used it many times with the greatest satisfaction. Before the end of the second month of pregnancy it is too bulky, and in such cases I employ the old Récamier curette, which also is dull, but much smaller and better adapted for this period. At a very early stage, say at the end of the first month, it is even necessary to use Simon's sharp spoon or Sims' curette. For the removal of the fetus, a blunt forceps with heart-shaped or oval rings is required, and the same instrument may, in rare cases, be necessary to assist in removing the placenta; but in nearly all cases I prefer the combined use of the finger and the large, dull, wire curette. By using moderate force one can safely scrape as long as anything comes away. When the uterus has been emptied and is small, it is only necessary to pack the vagina as described above. If it is larger, say corresponding to three-months' gestation, it is my practice to pack the uterine cavity with iodoform gauze before tamponing the vagina. The tamponade is removed the following day, and after that a vaginal douche of one-per-cent. carbolyzed water is given twice daily. The patient should remain in bed at least one week.

Immediately before and after curettage the uterine cavity should be flushed with two pints of a one-per-cent. creolin emulsion, which is both antiseptic and hemostatic. For this purpose I use a single-current metal tube. There is no advantage in combining the curette and irrigation-tube in one instrument. I prefer, on the contrary, to distinctly see what is scraped away. To use the finger as a curette is in most cases unsatisfactory, even when one hand is used for pressing the fundus down. The finger is often arrested at the internal os or does not reach the uppermost part of the cavity, and at all events, it can only be used to separate the ovum from the uterus, and cannot remove the decidua vera.

When the uterus is empty and the tampon has been applied, ergot may be administered to the best advantage, and it should be continued in doses of one

teaspoonful three times daily until an ounce has been taken.

Should pain be an element, which is exceptional after the uterus is empty, there is no objection to the administration of an opiate. In most cases it is certainly advisable to employ anesthesia. It is hardly necessary to say that the rules of clean midwifery should be carefully observed.

Should pregnancy be terminated after the fifth month, and the placenta not be expelled, either by the uterine contractions or by Credé's method, it is better to tampon the uterus and vagina as described before, and await further developments. If the placenta does not come away within twenty-four hours the dressing should be renewed and left in place a day longer, and then if the placenta yet remains within the uterus, its mechanical removal is positively indicated. The intra-uterine use of steam has of late been recommended, but it has been found in cases in which hysterectomy has subsequently been performed that it requires four weeks before the cauterized tissue is regenerated. Experience in other conditions in which I have used steam after curettage has shown that its use is often followed by a protracted purulent discharge. Consequently, its employment does not seem advisable.

That the treatment advocated in this paper may be used even when the os is closed, follows from its applicability to cases of induced abortion. I have had but four such cases, which were described in a paper read before the American Gynecological Society.¹ The operation was performed at the end of the first, the second, and the fourth months, and at the end of the seventh week of pregnancy. All the patients made good recoveries within a week, and at no time were seriously ill.

Our resources are limited for the treatment of septic cases, and the prognosis should be very guarded. If the fetus, ovum, or placenta are retained, or should there be hemorrhage, the cervix must be dilated and the uterus curetted and washed out. In doubtful cases it is often better to refrain from curetting, for by this operation the protective wall which Nature throws out may be destroyed, and infectious germs given a ready means of penetrating to the deeper tissues. Under all circumstances great attention must be paid to the general treatment in septic cases. The patient should be given as much whisky or brandy as she can tolerate—twelve ounces or more during the twenty-four hours. Salophen given in 5-grain doses every three hours has seemed beneficial. It is needless to say that the bowels should be kept open.

In localized septic cases a treatment similar to that recommended for simple abortion is indicated. In septicemia whether or not local treatment is necessary will depend upon the obtaining circumstances.

THE CONTRIBUTIONS OF BACTERIOLOGY TO THERAPEUTICS.¹

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It is now a matter of familiar knowledge that bacteria cause disease chiefly by means of the poisons which are elaborated during their growth. The abstraction of food from the body and the mechanical interference with functions which are caused by their presence are also deleterious, but in a minor degree. Bacterial activity outside the animal organism produces fermentation or putrefaction, inside the body it produces what is termed disease.

Although many complex factors influence the degree of susceptibility of the body to infection from any pathogenic germ, the most important and perhaps all-embracing one is whether or not the animal organism at the time and place of infection is in proper condition for the growth and activity of the invading germ. The living body certainly is not a good soil for most bacteria, even after they have penetrated the outer protecting wall of skin and mucous membrane. The reasons for this are, however, only partially discovered.

While it is true, that the animal temperature and the concentration of food in the blood and tissues militates against the growth of many forms of saprophytic bacteria, on the other hand, these conditions are not unfavorable to the vital processes of most pathogenic organisms, and can hardly be thought to explain the great variation in virulence between different varieties of the same species. Thus, if a single virulent streptococcus be introduced into the tissues of a rabbit, it reproduces itself a million fold within a few hours, and the resulting septicemia proves fatal within a short time, while a million streptococci from another and less virulent culture injected at one time will die instead of developing in the body of the inoculated animal. Both these cultures will, however, grow equally well in the blood-serum after its removal from the body. Consequently, to the other factors influencing bacterial growth must be added qualities only possessed by the living tissues. This protection against infection exists in different degrees in the same individual toward different bacteria, and among different individuals toward the same bacteria.

¹ "Transactions American Gynecological Society," 1875, vol. xx, p. 469.

¹ Original abstract by the author of the Wesley M. Carpenter Lecture, delivered at a meeting of the New York Academy of Medicine, October 21, 1897.

The causes of immunity, either natural or acquired, are still only partially understood. If a few virulent anthrax bacilli are injected into a susceptible animal, the results of inoculation are soon manifest, and death of the animal follows. If an animal of the same species, which has previously been immunized, be inoculated with the same germ, the bacilli not only do not increase but soon die. In seeking the reasons for this varying action of bacteria, it was found that in non-immunized animals they develop unhindered by the vital activity of the cells or fluid substances of the body, while in the immunized animals certain cells are attracted by the bacteria, and eventually destroy them. Mennes' recent investigation of the pneumococcus infections would seem to show that the attraction of the leucocytes for bacteria is not wholly due to any inherent property of the leucocytes, but rather to the effect upon the leucocytes of substances in the serum. He found that when pneumococci are added to non-immunized serum containing leucocytes from immunized blood, no phagocytic action occurs; but that when leucocytes from either immunized or non-immunized blood are added to immunized serum, they attack the bacteria. Besides this action of the cells, the blood probably possesses direct bactericidal properties. As to the nature of the action of toxic and antitoxic substances upon each other, there has been much curious speculation. The following slight modification of the theory of Knorr is presented as a working hypothesis:

It may be considered that a toxin is a substance which is directly poisonous according to the intensity of its affinity for the cells of the living body. Thus, the cells of a chicken which can tolerate enough tetanus toxin to kill thirty horses, but which can be affected by still larger doses, may be considered to have 10,000 times less attraction for the toxin than those of a horse. If we further consider that the toxin even has a stronger affinity for the antitoxin than for the cells, it may be understood how, this affinity being satisfied, the poisonous power is neutralized, and it can no longer injure the cells. An antitoxin may, in my opinion, be best conceived as a toxin which has been changed by contact with the living cell, either within the cell or outside of it. The antitoxin may have been changed by uniting with some constituent of the cell, or may have simply been acted upon by it. For the specific nature of the antitoxin it must, I believe, be considered to be a part, however little, of the toxin; for it seems improbable that the cells can produce a specific antidote for every variety of bacterial poison. Others consider that the antitoxin is secreted by the cells, the toxin simply acting as an irritant, and that the antitoxin also acts upon the cells, rendering them in-

susceptible to the poison. As neither toxins nor antitoxins have ever been obtained in a chemically pure state, and as an antitoxin cannot be separated from a toxin, nor differentiated from it by chemical means, we will be obliged to remain satisfied with theoretic explanations for some time to come.

An important characteristic of antitoxins is the fact that they are gradually eliminated from the blood by the urine, saliva, etc., so that after a few weeks they may have entirely disappeared. As we do not know the nature of the micro-organisms which cause smallpox, syphilis, etc., the immunity which follows their occurrence is naturally not clearly understood. Some days after the infection the blood contains immunizing substances, but they are very weak, and it is difficult to attribute to them the long duration of the immunity. However, when the long duration of the infectious period of syphilis is remembered, it is not impossible to imagine that the tissues in the other diseases in which protection is most lasting contain substances, perhaps in encysted form, which directly or indirectly cause the production of future immunity.

Bacteria differ greatly as to the particular tissues in which they can develop, and, therefore, in the manner in which they produce infection. Thus, a few tetanus bacilli are introduced by a splinter into the foot, they multiply but slightly, but find the soil suitable for the production of sufficient toxin to kill within a few days. The same bacilli introduced into the body by way of the alimentary canal, although readily developing in the intestines, find no lodgment in the mucous membrane, and are, therefore, harmless. On the other hand, the cholera spirillum introduced in the same way develops in the intestine and causes disease; carried by a splinter under the skin it is harmless. The bacillus of diphtheria requires still different conditions for its growth. It is practically harmless in the intestines, under the skin, or in the blood, but lodged on the throat or mucous membranes it causes diphtheria. Bacteria differ markedly in the rapidity with which they produce disease. Thus, the tetanus bacillus kills quickly by its toxin, while the tubercle bacillus slowly invades the tissues, and month after month destroys portions of one or more organs before finally causing death.

There are certain general factors which temporarily affect the susceptibility or resistance of the living tissues to all micro-organisms. Thus, clinically, as well as bacteriologically, it is known that lack of food, exposure to heat and cold, over-exertion, extreme youth, old age, and many other influences predispose to disease, while opposite conditions assist the body to protect itself.

In order to determine whether curative agents are produced for any individual disease, it is necessary to examine in each, by means of the toxins, or by means of living cultures, whether immunity may be produced in an animal, and whether in such an animal the blood contains at any time sufficient antitoxic, or bactericidal properties, to confer immunity when introduced into the bodies of other animals. Further, it must be decided in each individual disease what length of time may elapse from the date of the infection in which the serum or toxin will still be able to prevent the development or arrest the progress of the disease.

Tetanus antitoxin has been applied on a large scale in immunizing animals against possible infection. Thus, horses which are used for the production of antitoxic serums run a considerable risk of tetanus infection from the large number of hypodermic injections which are necessary. During 1895 the Health Department lost several very valuable animals in this way. Since then the experimental animals are immunized from time to time with 30 c.cm. of tetanus antitoxin, with the result that tetanus does not occur. The power of tetanus antitoxin to neutralize the poison before it has affected the cells is marvelous and certain, but after the cells have been injured the opposite is true. The results of treatment are not as brilliant as are those of immunization. By the time the symptoms of tetanus are manifested the cells are frequently too profoundly affected to receive any assistance from the antitoxin. The symptoms of this disease develop from one to five days after infection. Usually until the symptoms appear the animal may be saved by an injection of antitoxin, but after the appearance of the first symptoms the antitoxin is, as a rule, useless. Sometimes, however, it will save when given a few hours after the first symptoms have developed.

When the symptoms develop within six to eight days, and the disease runs an acute course of forty-eight to seventy-two hours, the antitoxin usually gives negative results. When, however, there is a longer incubation period, and the disease tends to run a more subacute course, the antitoxic treatment is very beneficial. Dr. Lambert, in a study of statistics, found that in thirty-one acute cases developing within eight days from the date of infection there was a mortality of sixty-one and one-third per cent., while among similar untreated cases the mortality is considered to be as high as eighty per cent. In forty cases of long incubation and slow onset of symptoms the mortality under antitoxic treatment was but five per cent., while in similar cases without the antitoxin, it usually is as high as forty per cent. Judged by these statistics, made it is true from a small num-

ber of cases, antitoxin seems to have positive curative effect in the less acute cases of tetanus. As it is impossible to tell at the outset which cases will be benefited, it seems wise in conjunction with the usual treatment to administer the antitoxin in doses of 20 to 50 c.cm., twice daily, in all cases of tetanus, and to begin the treatment at the very earliest possible moment.

The antitoxic treatment of diphtheria has so frequently and fully been treated, that I will only mention a few points which seem to me to be of special interest. Diphtheria antitoxin is singled out among antitoxins by the success which has attended its employment in the treatment of diphtheria, as vaccine is among immunizing procedures in the prevention of smallpox. The great mass of physicians, especially those having had the greatest experience, are convinced that diphtheria antitoxin in doses of 200 to 300 units will confer immunity against diphtheria during from two to four weeks, and that the period may be lengthened at will by repeated doses. By this means many children's asylums are now kept free from diphtheria. They are further convinced that when cases are seen early, that is at a period when the disease may be readily diagnosticated, but before general poisoning has occurred, antitoxin may be relied upon to arrest, with but very few exceptions, the progress of the disease.

Why is it, may be asked; that two substances such as tetanus and diphtheria antitoxin, so nearly identical in their efficacy as agents for immunization, differ so greatly in curative value? The secret is in the manner in which the two infections begin and progress. The tetanus infection progresses from five to ten days undetected in the wound, the toxins develop unnoticed, cause their deleterious effect, and only after general poisoning has occurred is the disease manifested to the observer. The diphtheria infection starts on the surface, and before its toxins are fully developed and absorbed it is diagnosticated. At such a period the tetanus infection could also be arrested. In diphtheria as in tetanus, if the favorable time is allowed to pass and the constitutional poisoning has occurred, the antitoxin is usually of no avail.

No other bacterial toxins produce such powerful antitoxin as do those of tetanus and diphtheria. The nearest approach is in the case of the plague bacillus. This with its toxins produces in immunized horses a serum which is distinctly antitoxic and bactericidal, so that from one-tenth to one-fortieth of a cubic centimeter will protect a mouse from ten times the fatal dose of toxin or living bacilli. This serum, prepared by Roux and Yersin, has proved to be capable of arresting the plague in monkeys in which the dis-

ease runs a course very similar to that in man. In man the serum has been used in several hundred cases, and given beneficial results both for purposes of immunization and cure, the mortality having been lowered from an average of eighty to fifty per cent.

The serum of animals immunized to streptococcus and pneumococcus toxins and cultures possess bactericidal and antitoxic properties, but of much less power than the plague serums. The streptococcus serum has been most experimented with, and has been obtained in sufficient strength so that a dose of one-fifth cubic centimeter would protect rabbits from one hundred times the fatal dose of streptococci. After infection has developed to any considerable extent the serum is useless. In spite of the many favorable reports of its use in septicemia, erysipelas, and other streptococcus inflammations, there is no doubt that its curative value is limited, and the discovery that it rapidly deteriorates accounts for the fact that practically all of the preparations on the market are valueless.

The serum of animals immunized to tuberculosis is also extremely weak in bactericidal and antitoxic substances. Most preparations show absolutely no immunizing effect. The apparently good results from any serum now on the market are probably due to other measures employed in the treatment.

The new tuberculin of Koch requires improvement before it can be advised for practical application. The experiments of Trudeau and Baldwin as reported in *THE MEDICAL NEWS* have shown that, as at present prepared, the new serum is not only frequently contaminated, but that most of the vials contain living tubercle bacilli. That these bacilli are capable of causing tuberculosis has been proved by Dr. Baldwin by experiments upon animals, when, in spite of continued tuberculin injections, the animals became infected and died of tuberculosis. It is too early to judge of the therapeutic value of the new tuberculin. It will probably be shown to possess slight curative value in beginning tuberculosis and in lupus. With an improved technic it should be furnished free from bacilli.

Typhoid fever and cholera may be classed together. Animals may be immunized to both, and their serum will be found to contain feeble antitoxic and moderate bactericidal properties. From the results of experiments upon animals, it may be said that injections of the serums or of the dead bacteria into man will produce a fair degree of immunity, which will continue some weeks. The treatment of typhoid fever with serum has not given any marked results, although a few observers have claimed that the attack is shortened.

Although no form of micro-organism has yet been

discovered in the brain or spinal cord of men or animals attacked by hydrophobia, nevertheless it is certain that one exists, for the disease is so readily transmitted from animal to animal in characteristic form that skepticism is impossible. The preventive treatment instituted by Pasteur has been subjected to an immense amount of criticism, but I believe its efficacy is to-day finally established. Two objections have been made to the treatment: (1) The proportions of cases developing after the bite is as large in those treated as in those not treated; and (2) that some who would not have developed hydrophobia from the bite developed it from the injection of the virus. As the Health Department intends soon to offer the Pasteur treatment to all who desire it, these criticisms have naturally been very interesting. During a visit at the Pasteur Institute in Paris this summer I carefully inquired concerning these points. It was stated that the apparent diminution in the percentage of those developing hydrophobia after bites by rabid animals is so great, that it is impossible to believe it to be due to misinformation as to the extent the disease formerly occurred. They stated that from time to time a person infected developed rabies two weeks or more after having passed through the whole course of treatment, which is a time when the patient should have been fully immunized. As to the possibility of producing hydrophobia by means of the injections, they believed it had never occurred in the thousands of cases treated at the Institute. Similar testimony comes from all the other institutes.

In order to test experimentally the immunizing value of the Pasteur treatment, numerous experiments have been carried out in the Research Laboratory of the Health Department of New York City by Drs. Wilson and Cabot. These, though not as yet complete, present striking evidence that the injections do produce immunity, and that when properly carried out they are without danger even in very susceptible animals.

The results of the use of vaccine virus in the prevention of smallpox are so nearly universally accepted that they will not be touched upon here. The serum of vaccinated animals contains very feeble curative properties, too feeble for practical use.

As to the future: The outlook is bright for obtaining through serums, or through the toxic substances of the micro-organisms themselves, means for immunizing against most if not all of the bacterial diseases.

This immunity in most instances will not be of long duration. This drawback may be overcome, however, by repeating the immunizing injection. When we have discovered the micro-organisms causing scarlet fever, measles, and the other diseases, in

which a prolonged immunity follows recovery from infection, we may hope to obtain vaccines as efficient as that now used in smallpox. The prospect of obtaining serums which will promptly arrest the further development of a disease by the destruction of the micro-organisms and their poisons already in the body, is rather less encouraging than it appeared to be shortly after the discovery by Behring of the diphtheria antitoxin.

The serum procured from animals immunized by the pneumococcus has only slight curative power, but sufficient has been accomplished to make further investigation imperative. The serum is practically harmless, and physicians who desire to test it would be justified, by the results of experiments already published, in using it in the treatment of cases of pneumococcus infection.

We must remember that all we can hope for is to stop all growth of the micro-organisms and prevent further action of the bacterial poisons at the moment the treatment begins. We cannot hope to benefit the tissue-cells or the activity of organs except by neutralizing certain deleterious products, and thus allow the vital processes and other therapeutic aids a better chance of success.

CLINICAL MEMORANDUM.

A CASE OF LYMPHATIC LEUKEMIA.

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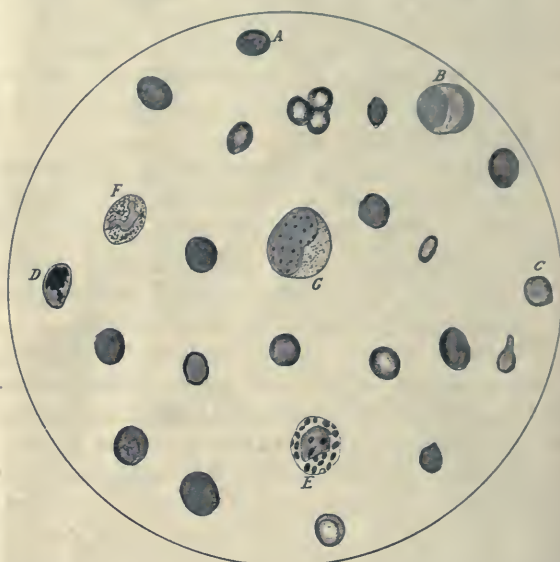
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CASES of pure lymphatic leukemia are very rare. We therefore report this case, although an autopsy was not permitted. The clinical features, however, were so characteristic that there can be no doubt as to the correctness of the diagnosis.

Tillie R., aged eleven years, of Russian parentage, was first seen by Dr. A. Friedenwald at the Hebrew Orphan Asylum about April 20, 1896. Finding the patient suffering from a profound anemia he ordered her sent to the Hebrew Hospital. She was admitted to the hospital April 27th, and through the courtesy of Drs. Rosenthal and Wolf we were allowed to observe the case.

We learned that the patient had been in ill health for five or six months previous to admission. She had frequently suffered from nose bleeding, had emaciated markedly, and was constantly languid and tired. She had complained frequently of palpitation of the heart and difficulty in breathing. The family history was negative. On examination the child was found to be very anemic and emaciated. The mucous membranes were extremely pale. Both legs showed signs of ecchymoses. There was no edema and no jaundice. The pulse was feeble, regular,

but accelerated (110 beats per minute). There was marked visible pulsation of the veins of the neck. The subaxillary, suboccipital, axillary and inguinal glands were much enlarged, the several glands of each set being distinctly separated from each other. The glands were all very tender to the touch. The respirations were increased in frequency (34 per minute), the lungs were everywhere resonant, the breathing puerile. The apex beat was weak, accelerated and found in the fourth intercostal space just within the mammary line. The heart-sounds were weak, though clear. The abdomen was markedly distended, though the presence of fluid could not be detected. The spleen was much enlarged, extending to within one-finger's breadth above the crest of the ilium and two-fingers' breadth to the right of the umbilicus. It was very tender to the touch. The liver was enlarged, extending to two-fingers' breadth below the costal carti-



Blood examination in a case of lymphatic leukemia. A. Small mononuclear lymphocyte. B. Large mononuclear lymphocyte. C. Red blood-cell. D. Nucleated red blood-cell. E. Eosinophile. F. Neutrophile. G. Myelocyte. (Objective, one-twelfth oil-immersion lens; eye-piece No. 4.)

lages. Its upper boundary in the mammary line was the sixth rib.

The urine was normal. The specific gravity was 1018. Upon microscopic examination crystals of uric acid were found. The ophthalmoscopic examination, made by Dr. Harry Friedenwald, May 3, 1896, was as follows: Papillæ pale and margins blurred. The vessels, both arteries and veins, very tortuous, their color being distinctly lighter than normal. There were dark hemorrhages scattered throughout the posterior portions of both retinae. For the most part these were small, the largest being half the size of the papillæ; many were but faint reddish discolorations. No white spots were to be seen anywhere in the retinae. The patient did not seem to be conscious of any impairment of vision.

The patient complained of severe headaches during the next few days, especially marked in the back of the head, and more pronounced in the evening. The appetite was

variable, there being a craving for acid foods. The temperature would rise each evening, reaching its highest point on the evening of May 1st,—104° F.

On May 6th, the patient feeling stronger, she was allowed to sit up for two hours, but at the end of this time she complained of severe pains in both legs and feet, which on examination were found to be markedly edematous. This was the first time this condition was noted. On the following day she became very irritable, there was a total loss of appetite, and nausea developed. She then began to vomit, and diarrhea set in. On May 9th she became very restless and had dyspnea. There was marked edema of the legs, arms, and hands. She died the next morning. Unfortunately no autopsy was allowed.

The examination of the blood was most important and interesting. These examinations were made on a number of different days, but as the results were identical they may be embodied in one report. The drop of blood obtained from the ear was strikingly characteristic of the condition which afterward was made apparent. It resembled sanious pus, rather than blood. Cover-slips were prepared in the usual manner for staining purposes, and differential counts were made in two ways from the fresh blood with the Thoma-Zeiss apparatus: first, Toisson's fluid was used to dilute the blood, and at the same time to stain the leucocytes, and with the special tube which accompanies the instrument the leucocytes were counted; second, a count of the red and white corpuscles was made from the stained specimens with the use of Ehrlich's stops—metal discs with a graduated square perforation in the center which fit into the eye-piece of the microscope. The results from these procedures were the same. The red blood-corpuscles numbered 800,000 per cubic millimeter, a marked oligocythemia, and the white corpuscles, an almost incredible number of 1,200,000, or the phenomenal ratio of two red blood-corpuscles to three whites. The hemoglobin, as estimated with the hemometer of Von Fleischel, registered twenty per cent., which was proportionate to the decrease in the red cells. The blood-slides were stained with a slight modification of Ehrlich's triple stain. Examination revealed that the increase in the white elements was confined exclusively to the small mononuclear lymphocytes, all other varieties of leucocytes being markedly diminished. In the red blood-cells few abnormalities other than the pronounced oligocythemia and the proportionate oligochromemia were observed. Nucleated red blood-corpuscles were present in small numbers, also a few megalocytes, and there was a slight poikilocytosis. In making the differential counts of the white cells, the Ehrlich stops were used and one hundred fields counted. A table giving the proportion of the different elements and the proportion of the different white elements in normal blood is appended.

	Tillie R.	Normal Blood.
Small mononuclear lymphocytes....	97.1	20
Large " " " and		
transitorial forms.....	.5	6
Polynuclear neutrophiles.....	2.	70
Eosinophiles.....	.1	1 to 5
Myelocytes.....	.3	.....

The great increase in the small mononuclear lymphocytes and a proportionate decrease in the polynuclear neutrophiles is striking. The eosinophiles are decreased, the myelocytes rare, which is in marked contrast to splenic myelogenous leukemia in which there is a great abundance of these elements. The presence of an inconsiderable number of myelocytes would not warrant the assumption that we were dealing with a case of mixed leukemia. Myelocytes are occasionally met with in like numbers in various other conditions.

This case is remarkable not only on account of the infrequency of this form of leukemia, but also from the fact that in no other recorded case, which we have been able to discover, has the number of white elements exceeded the red by such a majority.

MEDICAL PROGRESS.

Prognosis in Hemiplegia.—LÓDOR (*Medicine*, October, 1897) says there are three points which, when taken together, give a fair indication of the permanency of the paralysis in hemiplegia. They are the voluntary motor power of the patient, the spastic rigidity, and the increased reflexes. To reduce the problem to almost a mathematic level, let it be supposed that the fibers composing the pyramidal tract of one side number one hundred. Suppose that ten of the fibers are destroyed by degeneration subsequent to hemorrhage. If such be the case, after a lapse of three to six months, the patient should have recovered nine-tenths of his original power, with the increase in reflex represented by one-tenth and the rigidity or spastic condition scarcely noticeable. On the other hand, suppose that the reflexes are exaggerated one-tenth, the voluntary power reduced to zero, and no rigidity. With such a condition it is fair to suppose that nine-tenths of the fibers are intact and out of the reach of the patient's will, either from former pressure of the clot, or from long disuse, and that recovery may take place to the extent of nine-tenths of the former power. Again, suppose the patient presents the following points: Motor force reduced to one-tenth, reflex markedly increased, and rigidity great. With such symptoms it is fair to presume that approximately nine-tenths of the fibers have been destroyed, and that further recovery cannot take place. Experience has shown that these points are to be relied upon with almost mathematic precision.

Galvanocautery in Procidentia.—MACEVITT (*Brooklyn Med. Jour.*, October, 1897) has had excellent results from the use of the galvanocautery in procidentia. The operation, which is extremely simple, consists in cutting out with the cautery a conical piece of the uterus, including the cervix. The relief of the strain on the uterine ligaments, and the beneficial action of the heat, which extends far beyond the cauterized area, are the means of restoring to the ligaments their natural tone. In order to facilitate this, a large firm tamponade is inserted into the vagina, the cotton used for this purpose being saturated with glycerite of tannin. A new tampon should be inserted every day, preceded by a hot-water douche. This

treatment should be continued for about three weeks, the patient meanwhile remaining in bed with the hips elevated. Tonic treatment should also be administered. In a few months' time there will be a surprising diminution in the size of the remaining portion of the uterus. The only accidents which can happen in the performance of this operation, are the opening of the peritoneum, and the division of the uterine arteries. The former has no significance, as long as the bowel is not injured, and the latter simply means the application of a ligature. The shank of the cautery knife should be covered with cotton to protect the vagina from being scorched.

Prescribe Alcohol, not Whisky.—In the *Jour. of the Amer. Med. Assoc.*, August 21, 1897, is an article by DAVIS on the therapeutic properties of alcohol, and the reasons why the fermented and distilled liquors used as beverages should not be recognized in the pharmacopeia as medicinal agents. All the possible beneficial affects to be obtained from them may be derived from a suitably diluted alcohol, and by prescribing this, instead of wine, beer, whisky, and brandy, the doctor knows exactly how much alcohol he is administering—something which is impossible if the beverages are employed, as the percentage of alcohol in them is subject to such wide variations. Besides, all of these liquors contain other substances, many of which are injurious, and which may be excluded, if the plan advocated is adopted. Moreover, there is considerable saving of expense to the patient. Consequently, it is far more economic, as well as more accurate, for every physician to prescribe pure alcohol and water, to be administered with such quantity of sugar, milk, or meat broth, as in his judgment is required. It would be a very great step in advance, if in the next revision of the Pharmacopeia, only alcohol of standard strength should be retained, to the exclusion of all fermented and distilled liquors. If these changes were adopted and carried into general practice, the result would be a more complete separation of both pharmacist and physician from connection with, or responsibility for, the sale or use of the various popular alcoholic beverages.

THERAPEUTIC NOTES.

Saline Solutions in Obstetrics.—In the October number of *Medicine*, BACON makes a plea for a more general use of injections of saline solutions in obstetrics. Many physicians are forgetful of the value of this method of treatment, and few realize how very simple is the technic necessary for its employment. The good results attending its use in severe hemorrhage are well known. Although it is difficult to estimate the amount of blood lost during delivery, it is not far out of the way to say that a completely saturated sheet will contain two pounds. A deduction must be made for the amniotic fluid. In cases of hemorrhage of the "second degree," that is when from one-fourth to one-half of the blood in the body is lost (2.5 to 5 pounds), the importance of prompt thera-

peutic aid is very great. Absorption from the rectum of an injection though slow and rather uncertain, does well enough in the less severe cases, but when a patient has lost from two to five pounds of blood, it is necessary to use some quicker method to supply the required fluid in the vessels. This can best be accomplished by hypodermic injection, and the following simple rules are sufficiently accurate: A teaspoon of medium size is filled level-full of fine table salt, which is put into a pint of water and boiled. A hypodermic needle fitted to the end of three feet of rubber tubing and then filled with the solution is thrust into the inner side of the thigh; or by using a glass Y-tube, two needles may be used at the same time, one in each thigh. The saline solution is allowed to flow through the tube, no force but that of gravity being necessary. Constant massage is made about the point of the needle to assist in disposing of the fluid. In this manner from twenty-four to thirty-two ounces may be introduced in fifteen minutes, if the irrigator is raised three feet. Not more than a quart of fluid should be given at one time; if necessary, the injection may be repeated in an hour or two.

It is well understood that in eclampsia the toxicity of the blood-serum is increased. Whatever their nature, the poisons are not excreted by the kidneys fast enough. To increase the rapidity of excretion has been the rule of treatment. Formerly, venesection was employed to remove a part of the poisoned blood, while transudation from the lymph spaces, diluted that which remained. This dilution may also be obtained by the injection of saline solution. If a patient be plethoric, from twenty to forty ounces of blood should be withdrawn, and its place taken by the injected saline solution. In anemic patients it is better to make the injection without venesection. The salt solution is a valuable diuretic, diaphoretic, and purgative, as well as a diluent of the blood.

The treatment of puerperal fever by saline injections has been tried on the supposition that by dilution of the bacterial toxins and hastening their elimination, the condition of the patient will be improved. The successes are too few to permit an advocacy of the procedure in these cases. In fact the treatment of this dire affection has made practically no progress for three decades.

The Proper Method of Preparing Yellow Oxid of Mercury Ointment.—KEIPER (*Ophth. Record*, September, 1897) says that carelessness in the preparation of the ointment of the yellow oxid of mercury deprives this excellent application of much of its value. As in making a flour paste it is a matter of common sense not to dump all of the flour at once into the water, so in the preparation of this ointment the mortar and pestle should first be smeared with a little vaselin, and the mercury added in minute quantities, and thoroughly incorporated, adding then a little vaselin and again a little mercury until the whole is made into a smooth paste. This requires a considerable expenditure of time, but the result warrants it. The mixing may be somewhat facilitated by warming the mortar. When finished, the ointment must be kept in glass or porcelain.

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SATURDAY, NOVEMBER 6, 1897.

SEWAGE FARMS AND THE PUBLIC HEALTH.

GREAT progress has recently been made by a number of American cities in the methods of disposing of garbage, but few, if any, have yet attempted to deal rationally with the question of sewage disposal. As a rule, the easiest and apparently most economic method has been adopted, with the result that beautiful streams and waterways are contaminated to a degree which renders them a menace to the health of the communities along their banks. The system of "sewage farms" which utilizes to the best advantage the vast wealth of fertilizing material contained in the refuse of urban life, returning it, as it were, to the soil from whence it came, and preventing it from ultimately being lost in the depths of the sea, is the most practical method of dealing with the question.

Theoretically, many objections may be raised against this system which would be sufficient to condemn it, were it not for the fact that it has been tried, has proved to be unobjectionable, and is now in use in a surprisingly large number of transatlantic cities. For instance, England has fifty large sewage farms, and more than one hundred smaller ones. France and Germany have not adopted the system to

the same extent, but it is rapidly growing in favor. Berlin, Danzig, Breslau, and Freiburg are the most important cities of Germany that have adopted the system. From an article read by Dr. Theodore Weyl before the Berlin Medical Society, we learn that Breslau has had a sewage farm in operation since 1559, while the city of Edinburgh has used one farm for the disposal of all its organic refuse during one hundred and fifty years.

The most salient objections raised to the system are: that the sewage farms will cause an intolerable stench; that the earth will become saturated after a short time, and necessitate the employment of constantly widening areas appropriated to this purpose; and that sewage farms are likely to be an excellent culture-ground for the germs of infectious diseases. Dr. Weyl discusses these various objections, and answers them in a most convincing manner. Practically, the odors emitted are of no consequence. An English Parliamentary Commission, appointed to investigate the subject, reported through its expert, Dr. Carpenter, that the sewage farm of Norwood, in the vicinity of London, is so free from objections of this nature that a favorite promenade leads directly across its fields. Colin investigated a complaint about a sewage farm on the Seine, and found that the odor was due, not to the sewage, but to chemical works located near by. Incidentally the fact was brought out by this investigator, that schools had been established on the sewage farms, and that there was not an unusual amount of sickness among the pupils in consequence. In regard to the saturation of the soil and the failure of the mineral constituents to neutralize the organic substances, the fact that the city of Edinburgh has used one sewage farm continuously for so long, and that neither experience there or at Danzig, or Berlin, supports the assumption, is sufficient answer to this objection. The famous English hygienist, Corfield, confirms the observations made at Berlin and Paris, that only the soil of badly managed sewage farms can possibly become saturated. The character of the country which it is proposed to devote to one of these farms must be carefully considered in order that efficient drainage may be obtained.

The fear that these farms may become a source of disease seems absolutely unfounded. The medical officers of the English Commission above referred to,

through Dr. Littlejohn, deposed that in the year 1865-'66, when cholera raged in Edinburgh and London, the inhabitants of the respective sewage farms remained free from the disease. When Paris undertook the first sewage reform, the owners of villas in the vicinity of the proposed farms opposed their establishment, whereupon the French government appointed a commission of investigation, which published very elaborate reports. One of these was compiled by Bertillon, and in it was compared the mortality of the *arrondissement* in which the sewage fields were located with the neighboring *arrondissements*. On the sewage farms, taking the average for several years, six or seven persons per thousand died annually of typhoid fever. The same ratio, seven per thousand, held good for the other localities. The same was true in regard to deaths from diphtheria. The French military surgeon, Vallin, found that the mortality from typhoid among the garrisons of Southern France, namely, at Marseilles and Montpellier, was respectively fifty-six and fifty-seven per thousand. For the same number of soldiers in Northern France, namely, in Arras and Douai, it was five and thirteen per thousand. In Northern France sewage is disposed of by spreading it upon the fields as in the time of the Celts, and in spite of this rather barbaric method no unfavorable effect has been observed.

The sewage farms of Berlin are the largest in the world. Statistics have been preserved relative to their sanitary condition, extending over a period of fifteen years according to a system elaborated by Virchow. These statistics show that the inhabitants of sewage farms and their neighborhood maintain an average health in advance of that of Berlin. Moreover, mortality among children living upon these farms has been less than that among children in the city. As to dysentery, intermittent fever, measles, and scarlatina, the percentage of sickness and of death has also been lower on the sewage farms. Moreover, Professor Virchow affirms that in no instance could cases of typhoid fever be ascribed to infection from these farms except in instances in which the patients had drunk the sewage water.

The vegetables and various products of these farms are not only used for food by the people who inhabit them, but are sold in the markets of the neighboring villages and towns. Even lettuce and celery have not been charged with having conveyed disease.

OUR QUARANTINE AS IT IS AND AS IT SHOULD BE.

THE first step toward the inauguration of a National Department of Public Health necessitates a complete reorganization of our present system of quarantine. Let us examine for a moment this important branch of National sanitation. There are at present sixty-eight quarantine stations on our seaboard. These are divided according to their purpose into simple inspection stations, of which there are forty-four, and quarantine stations proper, of which there are twenty-four. Of the latter, eleven are National, conducted by the Marine Hospital Service, and thirteen are under the jurisdiction of State or local authority. Of the inspection stations six are National and thirty-six, State or local. This division of administrative authority is responsible for most of the abuses and shortcomings which mark the system. It gives rise to unnecessary stations and to the overlapping which frequently occurs. For instance, in addition to a National Quarantine Station at the Delaware Breakwater and another at Reedy Island, further up the Bay, there is a local quarantine and boarding station at Marcus Hook, eighteen miles below Philadelphia. That the last-named is unnecessary is evident to anyone; for all ports on Delaware Bay are fully protected by the Government stations.

Should it be asked what is the actual *raison d'être* of the supernumerary station, it would be difficult to answer, unless it is to give employment to the necessary officials. That this statement may not appear unwarranted, let us inquire into the work which has been accomplished at this station. A year and one-half ago it did not possess an apparatus for the disinfection of vessels and baggage, and had no facilities for the removal and detention of suspected individuals. Quarantine was maintained under United States Treasury laws and the laws of Pennsylvania; but the quarantine procedures were those of the Treasury Department. Any vessel having on board a case of cholera, yellow fever, or smallpox was (or would be) returned to the Federal quarantine at Reedy Island.¹

Such is the local quarantine station of a port where 1379 vessels arrive during a year.

To make a long story short, when nothing is re-

¹ "Report of Inspection," by Surgeon George Purviance, M. H. S. "Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Year 1896."

quired but perfunctory inspections and the collection of fees, the Marcus Hook Station is amply sufficient; but should an emergency arise, calling for the exercise of genuine quarantine functions, it would be necessary to call upon the National Quarantine Station at Reedy Island conducted by the Marine Hospital Service, where vessels and baggage can be disinfected and suspects removed and detained.

This is not an isolated instance as is proved by the fact that the same condition exists at the local quarantine stations of Charleston, S. C., Savannah, Ga., Fernandina, Fla., Mobile, Ala., Sabine Pass, and Galveston, Texas. The palpable absurdity of a system so conducted that a pest-ship must go from Texas ports to Ship Island, Miss., or from Charleston or Savannah to Sapel's Island, Ga., for quarantine is manifest to the most casual observer. Such a system is inefficacious, onerous, and inhuman.

While, of course, the function of quarantine is the protection of the public from an invading disease, its enforcement should be as free from harsh exactions as is compatible with efficiency, and the expense to commerce should be reduced to a minimum. That a pest-ship should be obliged to go out of its course a hundred miles or more to be disinfected is a sufficient evil in itself; but that the sick, often without medical care, and the well, in constant danger of infection, should be penned up in the same vessel, perhaps for several days, is barbarous.

A system of quarantine which is just and humane, at the same time that it is efficient, should at once remove the sick to a hospital, should have means for comfortably caring for the well, but possibly infected, should possess the necessary apparatus for the speedy disinfection of vessels, baggage, merchandize, and clothing.

Another strong argument in favor of a uniform and National control of quarantine is the great benefit which would accrue to ports of entry by the abolishment of the sometimes onerous taxes and fees. It is enough for shipping to be obliged to pay pilotage, custom's fines, harbor dues, towage, and lighterage, one or all, as it must in many ports, without having to pay inspection and other fees to local quarantine officers. Ships entering ports protected by National quarantine stations do not pay inspection fees, and when occasion arises are disinfected free of charge, and their sick are likewise gratuitously cared for. In the

very next port, perhaps protected by a local or State quarantine station, all these compulsory attentions must be well paid for. Such discrimination militates in favor of the free port, and has induced commercial organizations in many instances to advocate a National quarantine. As Surgeon-General Wyman has said, "there are quarantines for protection and quarantines for revenue." The latter, all State or local affairs, should be promptly abolished in the interests of commerce, economy, science, and humanity. By lack of uniformity, they are a constant menace. By reason of local and political character, their personnel is often unscientific and is always changing. In fact, from no standpoint except perhaps a selfish one can the present dual system be defended.

The Marine Hospital Service has proved itself capable of conducting quarantine affairs scientifically, economically, and uniformly. Let us, therefore, place under its jurisdiction a quarantine service which of necessity will be uniformly and justly administered and supported, as an efficient quarantine must be, by Federal authority.

ECHOES AND NEWS.

Gum-Chewing.—The *British Medical Journal* deplors the fact that the habit of gum-chewing, "so prevalent in the United States," is on the increase in England.

Bequests to Charity.—By the will of the late Caroline Talman of New York City, \$135,000 is left to New York charitable institutions and societies, of which the Home for Incurables receives \$5000; Free Church House for Incurables, \$3000; St. Luke's Hospital, \$5000.

Changes at Bellevue Hospital.—By order of the Commissioners of Charities, fifteen employees at Bellevue Hospital have been discharged on account of lack of funds to meet the running expenses. The salaries of the places made vacant vary from \$240 to \$600 a year.

Diphtheria on Staten Island.—Within the past two weeks twenty-seven cases of diphtheria, with four deaths, have occurred at Stapleton, Staten Island. The local physicians claim that they have the disease under control and no apprehension is felt in regard to a spread of the infection.

Winter Gardens for the Poor.—The recreation-piers which have been constructed in New York during the past season will be enclosed with glass and fitted up as winter gardens. They will be heated, lighted with electricity, decorated with plants, flowers, fountains, etc. Three of them will be ready for occupancy before the new year.

Obstetrical Society Elections.—At the last meeting of the New York Obstetrical Society the following were elected

officers for the ensuing year: President, Dr. W. Gill Wylie; first vice-president, Dr. J. C. Edgar; second vice-president, Dr. A. M. Jacobus; recording secretary, Dr. Le Roy Broun; assistant recording secretary, Dr. Geo. W. Jarman; corresponding secretary, Dr. E. B. Cragin; treasurer, Dr. J. Lee Morrill; pathologist, Dr. Geo. C. Freeborn.

The Pathogenic Role of Dust.—According to a communication recently read before the Paris Academy of Medicine, the floors of dwellings are as fruitful and dangerous a cause of infection as drinking-water. It is stated that, with the exception of typhoid fever and cholera, which are almost always spread by means of water, by far the greater part of other infectious maladies, such as the eruptive fevers, diphtheria, pneumonia, and, above all, tuberculosis, almost always arise from germs preserved in dust, except when direct infection takes place.

Verdict for a Hospital.—A suit for \$30,000 was recently brought by a woman against St. Vincent's Hospital, New York, for injuries received while in the hospital as a private patient. The woman was operated upon and was badly burned by an unprotected hot-water bag which was placed in her bed. The facts in the case were not disputed, but counsel for the hospital asked that a verdict be given for the defendants on the ground that all reasonable precautions had been taken by the management, and that the negligence was the fault of the nurse alone. A verdict was rendered in favor of the hospital.

Serum Diagnosis of Typhoid Fever.—Surgeon-major Smith of the Army Medical School at Netley, England, has been applying the serum test in groups of cases of diarrhea which have accompanied the typhoid epidemic at Maidstone. The results of his tests show that it is unsafe without a controlling bacteriologic examination, to infer that cases of diarrhea which occur before or in the course of epidemics of typhoid fever are in any way the cause or consequence of the prevailing epidemic. In other words, his experiments failed to show the presence of the typhoid reaction in cases characterized by diarrhea only.

Dangers Attending Bacteriologic Work.—Surgeon-major Semple, attached to the Army Medical School at Netley, England, recently scratched his hand with a hypodermic needle when immunizing a horse for the preparation of serum against Malta fever. Shortly after this he developed the symptoms of the fever, and his blood when examined gave a typical reaction of the micrococcus of Malta fever when diluted 1-1000. As an act of poetic justice, the horse which he was immunizing has been bled, and has supplied two injections of its serum to his immunizer. The patient is responding to the treatment and gives promise of speedy recovery.

Bubonic Plague in India and China.—It is officially announced in Bombay that an outbreak of plague has occurred in the Jalandhar district of the Punjab, and the village where the disease has made its appearance has been

cordoned. There are 294 cases in the hospitals at Poonah, and 115 cases are being cared for at Bombay. The United States consul at Amoy, China, in his report to Washington, says that the plague has died out at that place after running for three months. Nearly 90 per cent. of the persons attacked succumbed to the disease, but no foreigner contracted it. In Amoy and four adjoining towns there were 250 deaths from the plague daily during June, 400 daily during July, 200 daily during the first fifteen days of August, and 100 during the latter part of that month.

Starvation in Cuba.—Sanitary Inspector Brunner, in his last report to Surgeon-General Wyman of the Marine Hospital Service, reports seven deaths from starvation in Havana for the week ending October 7th, and twenty-one for the week ending October 14th. He also reports an increase in intestinal diseases due to the diminished food-supply, and estimates that two-fifths of the total deaths of the city are due to this cause. He calls attention to Los Fosos, a place set aside for the country people sent to Havana, and which he describes as a pest-hole. It is a large wooden building, 60x50 feet, situated in an inclosure which is used for storing the carts of the municipality. Of the 500 persons in this building, which is not a hospital, over 200 were found lying on the floor, sick and dying. All the children under ten years of age are suffering from enteritis or dysentery, and their emaciation is startling. About ten die every day. The civil hospitals are full to overflowing and are refusing patients, one—the Mercedes—capable of properly caring for 200 patients, now has nearly 500.

Lodge Doctors Not Allowed in Quebec.—The resolution passed by the College of Physicians and Surgeons of the Province of Quebec prohibiting medical men from accepting the position of lodge doctor was moved by Dr. J. B. McConnell, and seconded by Dr. S. Gauthier. It is as follows: "In view of the extent to which the members of the medical profession are defrauded of proper remuneration for professional services, owing to the acceptance by many of positions as medical officers to various benefit societies, lodges, etc., where remuneration is arranged for by contract, it be considered beneath the dignity of our profession to accept and hold such positions. In order that all professional services shall be awarded remuneration not less than the tariff adopted by this board, it is hereby enacted that members of the College of Physicians and Surgeons of the Province of Quebec shall be prohibited from accepting or retaining the position of lodge doctor where a stipulated amount is paid annually or otherwise for professional services amounting to less than the minimum tariff adopted by this board, or from attendance upon families, groups of families, or other associations, at contract prices, which name a stated amount for a certain term, usually an annual fee, and that no physician shall be permitted to retain membership in this college or practice in this Province who accepts such positions." The College of Physicians and Surgeons has the power to revoke all licenses to practice medicine or surgery in the Province.

Health Reports.—The following statistics, concerning smallpox, yellow fever, cholera, and plague, have been received in the office of the Supervising Surgeon-General of the United States Marine Hospital Service during the week ended October 30, 1897:

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Mobile, Ala.....	October 23-29.....	40	5
Montgomery, ".....	October 21-29.....	99	6
Notasulga, ".....	October 25.....	1	0
Sandy Ridge, ".....	October 25.....	1	0
Selma, ".....	October 23-26.....	17	1
Whistler, ".....	October 29.....	not stated	2
Atlanta, Ga.....	October 24.....	1 (refugee)	
".....	October 27.....	1 (d't camp)	
Baton Rouge, La.....	October 22-28.....	3	..
Franklin, ".....	October 20-21.....	2	..
New Orleans, ".....	October 23-29.....	367	52
Petterson, ".....	October 21.....	1	..
Bay St. Louis, Miss.....	October 23-28.....	33	3
Biloxi, ".....	October 23-29.....	91	5
Cayuga, ".....	October 23-28.....	5	..
Clinton, ".....	October 23-29.....	7	..
County Farm, ".....	October 25.....	1	..
Edwards, ".....	October 23-29.....	19	1
Hinds Co. convict camp.....	October 23-27.....	6	..
McHenry, ".....	October 23-29.....	6	..
Nitta Yuma, ".....	October 23-24.....	6	..
Pascagoula, ".....	October 23-29.....	11	..
Scranton, ".....	October 23-29.....	75	4
Memphis, Tenn.....	October 23-29.....	31	3
Galveston, Texas.....	October 27.....	yellow fever present	

YELLOW FEVER—FOREIGN.

Para, Brazil.....	October 2-9.....	..	5
Cienfuegos, Cuba.....	October 10-17.....	..	2
Havana, ".....	October 14-21.....	..	13
Matanzas, ".....	October 6-20.....	..	6
Kingston, Jamaica.....	July 9-October 9.....	44	23
Manchester, ".....	July 9-October 9.....	7	2
Port Antonio, ".....	July 9-October 9.....	1	1
St. Elizabeth ".....	July 9-October 9.....	1	1
San Salvador.....	July 1-31.....	38	11
".....	August 1-31.....	54	16
".....	September 1-30.....	34	12

CHOLERA—FOREIGN.

Hong Kong, China.....	September 4-11.....	..	1
Calcutta, India.....	September 11-25.....	..	21
Madras, ".....	October 18-23.....	..	7
Singapore, ".....	August 1-31.....	..	1
Kanagawa Ken, Japan.....	September 23-30.....	1	1
Tokyo Fu, ".....	September 23-30.....	3	2

PLAGUE—FOREIGN.

Bombay, India.....	September 14-21.....	..	35
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SMALLPOX—UNITED STATES.

New Orleans, La.....	October 16-23.....	1	..
McKeesport, Penn.....	October 16-23.....	..	1

SMALLPOX—FOREIGN.

Alexandria, Egypt.....	August 7-September 16.....	..	2
Cairo, ".....	August 7-September 16.....	..	6
Calcutta, India.....	September 4-25.....	..	3
Glasgow, Scotland.....	October 2-9.....	10	..
Odessa, Russia.....	October 2-9.....	1	..
Moscow, ".....	September 25-October 2.....	3	1
St. Petersburg, ".....	October 2-9.....	4	4
Warsaw, ".....	October 2-9.....	..	10

The "Massage-Treatment."—It is well-known that massage, an excellent thing when medically prescribed and

scientifically applied, is not only hazardous but positively injurious when an individual puts himself in the hands of the average "masseur," who is usually ignorant of anatomy and physiology. In cases where there is a gouty diathesis, ignorantly applied massage of muscles infiltrated with uric-acid poison creates as much histolytic waste as a brisk six-mile walk, and calls upon the kidneys for an excretory effort quite beyond their powers. Repeated day after day and unmodified by circumstances, this process is destructive to the already damaged kidney, and the patient finds he is rid of a certain amount of pain at the expense of a chronic renal incompetency and eventual uremia. In England and on the Continent this history is so commonly elicited that the condition is known as "massage-kidney."—*London Lancet*.

Progress at Craig Colony During the Past Year.—The Craig Colony for epileptics at Sonyea, Livingston County, N. Y., closed its fourth fiscal year September 30, 1897. There were at that time 214 patients in the colony, the majority of whom had been transferred from the various county houses throughout the State. New buildings are in course of construction which, when completed, will enable the colony to accommodate 140 additional patients, making the total number about 350. It is estimated by State charity officials that this number represents about one-third of the total number of epileptics now a public charge throughout the State. The medical superintendent, Dr. William P. Spratling, reports a great increase in the value of agricultural and industrial products of the colony over last year, so that the ratio of earnings of the patients to the cost of their maintenance is even larger than that of last year, which was a little over 50 per cent. A laboratory for the use of a pathologist and pathologic chemist is being constructed. Dr. Christian A. Herter of New York has been appointed pathologic chemist, and Dr. Ira Van Giesen of New York, consulting pathologist to the colony. Dr. Frederick Peterson of New York was re-elected president of the board of managers. The managers, at their annual meeting, decided to ask the coming legislature for \$200,000 for dormitory buildings in order that they may increase the residence capacity of the colony for patients.

ANNOUNCEMENT.

THE SEPARATION FOR DIAGNOSTIC PURPOSES OF THE TYPHOID BACILLI FROM THE STOOLS AND URINE IN CASES OF TYPHOID FEVER—A NEW METHOD.

BY THE NEW YORK BOARD OF HEALTH.

THE examination of specimens of blood from cases of suspected typhoid fever for the Widal reaction has been of great assistance in diagnosis. Occasionally, however, the agglutinating substances do not develop in the blood at any time, or only very late in the course of the disease, or an earlier infection cannot be excluded, owing to the lack of a reliable previous history. In these instances the Widal test fails to give the information desired.

Bacteriologists have long sought for a rapid and certain

method of obtaining and identifying in pure culture the typhoid bacillus from the stools and urine in cases of typhoid fever; but hitherto without satisfactory results. Dr. Hiss, Assistant Bacteriologist to the Health Department, has devised a method, by which it is believed it will now be possible to recover and identify the typhoid bacilli within less than forty-eight hours, from specimens of feces and urine containing them. The Health Department desires to thoroughly test this method and is prepared to undertake these examinations, if proper specimens are furnished.

While definite knowledge is lacking as to the number of typhoid bacilli usually present in the stools of typhoid patients, and as to the time of their appearance and disappearance, it is believed that they are generally present in the discharges, not only during the height of the disease, but also, though to a less extent, at its commencement and for a considerable time during convalescence. The appearance of the bacilli in the urine is usually later than in the feces. The experience thus far obtained seems to indicate, that the bacilli may be obtained from about fifty per cent. of all cases on the first examination, and from about ninety per cent. after repeated examinations. The Health Board hopes that these examinations will prove of value, not only for diagnostic purposes, but also in solving important sanitary questions relating to the presence in and time of disappearance of the bacilli from the stools during convalescence.

Physicians are requested to send specimens of intestinal discharges and urine from well-defined cases of typhoid fever, and also from all doubtful cases in which the Widal test has failed to give definite information.

It must be understood that, as yet, these investigations are largely experimental; but that when the typhoid bacilli are isolated in culture an absolute diagnosis of typhoid infection is obtained.

DIRECTIONS FOR PREPARING SPECIMENS OF FECES OR URINE FOR EXAMINATION.

Care should be taken to send, if possible, a specimen obtained from a natural movement, or one following a simple enema. No disinfectants, of course, should be employed. If the movement is formed, the portion from the part last passed, that is, the portion coming from highest up in the intestine, should be selected. In cases complicated by colitis, care should be observed to avoid, if possible, the selection of a specimen largely composed of mucus.

The specimen is collected by seizing a small portion of the discharges between the two slips of wood accompanying the outfit, and placing this in a bottle. The top of the bottle is replaced and the specimen returned to a culture-station or to the laboratory.

Specimens of urine should be received directly into the bottle accompanying the outfit, or should be collected in an absolutely clean vessel and immediately transferred to this bottle, which is then returned to a culture-station, or to the laboratory.

The necessary outfits, with directions and blanks, may be obtained at the various Health Department Depots, where diphtheria culture-tubes, antitoxin, and other prod-

ucts are supplied. The accompanying blank should be fully filled out in every case.

DIRECTIONS FOR PREPARING SPECIMENS OF BLOOD.

The skin covering the tip of the finger is thoroughly cleansed and then pricked with a clean needle deeply enough to cause several drops of blood to exude. Two large drops are then placed on the glass slide, one near either end, and allowed to dry without being spread out on the surface of the slide. After they have dried, the slide is placed in the holder and returned in the addressed envelope to a culture-station, or mailed to the laboratory. The blank giving the history of the case must be filled out in full and forwarded with each specimen. The data thus obtained are for record.

DIRECTIONS FOR OBTAINING SPECIMENS OF SERUM FROM BLISTERS.

The shield (designed to protect the blister from rupture), is stripped from its protecting gauze and applied to the skin somewhere on the anterior portion of the body. The piece of canthos plaster is then fixed within its center. After ten to twelve hours, the shield is removed and one of the ends of the small glass tube accompanying the outfit is introduced into the blister. The tube, both ends of which should be open, should be held so that the end inserted is higher than the other, to allow the serum to run into it. After the tube has been nearly filled, it is removed and the ends sealed by holding them a moment in a gas flame. Care must be observed not to heat the middle portion of the tube, and thus coagulate the serum. The tube so prepared is then placed in the wooden box and returned in the addressed envelope to a culture-station, or mailed to the laboratory.

A report on the result of the examination will be mailed to the attending physician on the following day.

CHARLES G. WILSON, *President.*

GEORGE B. FOWLER, M.D., *Commissioner of Health.*

EMMONS CLARK, *Secretary.*

CORRESPONDENCE.

THE CHARITIES COMMISSIONERS' FATAL PRECEDENT.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: THE MEDICAL NEWS of October 30, 1897, in an editorial on this subject, reflects so severely upon the manner of my recent appointment as visiting physician to Bellevue Hospital that I am forced to conclude that the article was based upon misinformation or misapprehension of the actual facts, and to ask you, as a matter of fairness and justice, to publish the other side of the story. As little autobiography as possible will be inflicted upon the patience of your readers.

For some years prior to October, 1895, the writer had been visiting physician to Gouverneur Hospital, but in the reorganization of the Charities Department at that time, he was one of those summarily removed without cause. The different nominating bodies, however, expressed regret at his removal, and one of them—the Bel-

levue Hospital Medical College faculty—reinstated him as their medical representative in Gouverneur Hospital. Another nominating body—the fourth or non-collegiate division of Bellevue Hospital—tendered him the unsolicited position of assistant visiting physician to Bellevue Hospital for the year 1896. At the end of 1896 this appointment was renewed for the year 1897 with many assurances of satisfaction with the work of the assistant visiting physician.

This commendation of his work and evidence of confidence on the part of his principals encouraged the assistant physician to ask for a nomination for the post of visiting physician when a vacancy occurred during the summer of 1897. He adhered strictly to the "time-consecrated method of procedure," and sought this professional honor, as he has sought and obtained other professional honors—entirely at the hands of his colleagues in medicine; in this instance at the hands of men whose absences from duty he had been covering for eighteen months. To his amazement he was informed by four of the six members of the division that no applications for the position could be considered, as the appointment had been promised to one man three years before the vacancy occurred, and that this man's name, and no other, would be sent to the Commissioners for appointment. He thereupon appealed to the Commissioners against the injustice of this discrimination, and the Commissioners, believing with him that the fourth division had no reason for official existence, except in the claim that they represented the whole of that portion of the medical profession not engaged in teaching in the three prominent colleges, decided that this restriction of the appointment practically to one man in the whole profession was an example of that "hasty and nepotistic action" which is so much deplored in the editorial referred to.

The Commissioners returned the nomination, but they *did* assign their reasons and they *did* ask that more than one name be submitted to them, unless the nominating body were prepared to show cause why the other candidates (and the writer of this communication had very good company to whom a nomination was also denied) were unworthy to be considered.

The fourth division responded to this by submitting a plan by which more than one appointment could be made, but the plan was so outrageous an invasion of the rights of others, that the writer preferred to sacrifice his chance of appointment under it than to be a party to such a scheme.

The Commissioners then grew tired of waiting to see a simple act of justice done, and took away from the fourth division the power to make the nominations at all, leaving to the colleges, however, all their previous privileges. Hereafter, any reputable member of the medical profession may apply for a vacant position in that one-quarter of the hospital service which is not already assigned to the three undergraduate medical schools, with the certainty that neither nepotism, nor lack of social connections, nor absence of financial stability, nor lack of college affiliations, can prevent his claim from at least being considered.

It may be possible to demonstrate that a man who has

spent the best years of his life laboring among the poor will not be the man to use a position in the hospitals of the poor "to advance personal interests and emoluments at the sacrifice of science and of the patients whom circumstances confide to his care," even though his appointment may have been made "in a manner entirely at variance with traditional methods."

Respectfully yours,

CHAS. E. NAMMACK, M.D.,

Visiting Physician to Bellevue and Gouverneur Hospitals.

42 EAST TWENTY-NINTH STREET,

NEW YORK, November 1, 1897.

[It appears that it would be in order for the majority of the fourth division to rise and explain.—ED.]

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

TYPHOID FEVER AND MUNICIPAL WATER-SUPPLIES—
THE PURE FOOD LAW—POLICE AND FIRE DEPARTMENTS AND FIRST AID TO THE INJURED—ADDITIONS TO THE GERMANTOWN HOSPITAL—DR. FORD'S SUCCESSOR.

PHILADELPHIA, October 30, 1897.

AN elaborate and interesting report of the death-rate from enteric fever in different cities in relation to the character of their water-supplies has been recently issued by the Director of Public Works of this city, and this comprehensive review of the question has shown, as has been done in the past by other inquiries on this topic, the great difference in mortality in favor of the cities using filtration over those cities in which the water-supply is unfiltered. The statistics of sixty-six different cities have been compared, according to their death-rate from typhoid during a period of five years, and the results of this classification have been anything but complimentary to Philadelphia, which in comparative immunity from typhoid ranks forty-fifth in the list. Of the more important cities in the group, according to their relative immunity, are the following: Dresden, 4; Berlin, 8; Amsterdam, 10; London, 13; Edinburgh, 14; Brooklyn, 16; New York, 17; New Orleans, 18; Hamburg, 21; Paris, 25; Boston, 30; San Francisco, 38; Baltimore, 41; St. Louis, 43; and Philadelphia, 45. Looking at the matter from another standpoint, it will be found that during the five years covered by these statistics the death-rate from typhoid fever per 100,000 people in Philadelphia was 243, while in the Hague, where sand-dune filtration is employed, the rate was but 24, and in Rotterdam, another city using thorough filtration, the mortality was only 26. This argument for the filtration of the water-supply of Philadelphia, which has been for many years earnestly desired by all who understand its value, should be effective in hastening the passage of an ordinance for the establishment of filtration-plants on a large scale; and it is to be hoped that the experimental filtration-station lately authorized by the city authorities will pave the way to its universal application in this city.

The "Pure Food Law" which was passed by the State Legislature early last summer and which was technically in force at that time, has in reality not been put into practi-

cal use until within the past two weeks, when the public were first acquainted with the act by the issuance of an official pamphlet by the State printer. *Apropos* of the discussion at present going on in Philadelphia concerning milk adulteration, it may be of interest to note the provisions of the new law regarding this important food-stuff. One section says: "That the sale or offering for sale of milk or cream for human consumption to which has been added boric-acid salt, boric acid, salicylic acid, salicylate of soda, or any injurious compound or substance for artificially coloring the same, shall be punished by a fine of not less than \$50 or more than \$100, or by imprisonment not exceeding sixty days, or both, at the discretion of the court." Similar fines are imposed by the act for the sale of cheese not the legitimate product of pure unadulterated milk, or any cheese to which have been added foreign fats or substances. Other laws of a similar character forbid the employment in bake-shops of persons affected with tuberculosis or any other infectious or contagious disease, and forbid the importation into this State of dairy cows, except upon a certificate of freedom from tuberculosis issued by an official inspector.

In compliance with an order recently issued by the Director of Public Safety in the matter of instructing the city police and fire departments in methods of rendering first aid to injured persons, a regular course of instruction on this subject is to be given to the policemen and firemen of the various districts. This course includes simple methods of controlling hemorrhage, the treatment of different varieties of wounds, and directions for rendering first aid in cases of drowning, strangulation, unconsciousness, insolation, heat-exhaustion, and poisoning. The previous lectures in past years are said to have borne good results, and it is thought that this systematic instruction will be effectual in many instances in relieving pain and in saving life by prompt and proper action before the arrival of regular medical aid.

The new annex to St. Timothy's Hospital is almost completed, and will be open early during November. The new building is two and one-half stories in height, and is connected with the main hospital building by a covered passageway. The annex will be chiefly used as a receiving-ward, and in addition contains a large women's ward on one of the upper floors.

Important additions necessitated by the large increase in number of its patients are being made to the German-town Hospital. The improvement consists in the erection of two large wings adjoining the hospital proper, one of which is to serve as a children's ward, and the other to be used for an operating-room, and for dispensary purposes. It is intended that the new buildings shall be open for patients before the close of the year.

At a special meeting of the Board of Health A. A. Hirst, who has been a member of the board for twenty-two years, was elected President, *pro. tem.*, in place of Dr. William H. Ford, deceased, and J. Lewis Good was elected Secretary, the place held for many years by Mr. Hirst.

At the request of Director Riter, the New York city authorities will be asked to take precautions against the

escape of certain lepers now living in a tent near Bellevue Hospital.

The deaths occurring in Philadelphia during the week ending October 30th, reached a total of 349, a decrease of 57 from the preceding week, and a decrease of 13 over the corresponding week of last year. Of the whole number of deaths, 97 occurred in children under five years of age. The new cases of contagious diseases numbered 234, or 22 more than the week before. There were 5 deaths from enteric fever, with 26 new cases; 3 deaths from scarlet fever, with 54 cases; and 24 deaths from diphtheria, with 154 new cases.

THE INTERNATIONAL LEPRO CONFERENCE.

[From our Special Correspondent.]

BERLIN, October 30, 1897.

THE International Leprosy Conference held its last session the morning of the 16th of October, and the members left the city thoroughly persuaded that Berlin is the place in which to hold a medical meeting. The reception accorded them on all sides has been most cordial. The Kaiser himself and the Imperial Government clearly manifested interest in the conference. The Chancellor of the Empire gave a reception to the members on Tuesday, and the Emperor and Empress received them in the "New Palace" at Potsdam on Friday. All the foreign delegates were given a personal introduction to the Emperor, who evidenced considerable information on the subject of leprosy, and showed that he is able to appreciate the work of the Conference. The new Public Health Building was placed at the disposal of the Conference, and proved eminently suited to the purpose. The feeling expressed on all sides was one of hearty appreciation of the efforts of the Berlin Dermatological Society, and especially of Professor Lassar, the chairman of the Committee on Organization.

The proceedings of the first day consisted of addresses by distinguished leprologists, introductory to the proper work of the Congress, which largely consisted of the discussion of mooted points.

Professor Besnier of Paris insisted upon the possibility of an early diagnosis of leprosy by means of a bacteriologic examination. He emphasized the importance of such a diagnosis in the protection of others from chances of infection.

Professor Hansen's address was brief, and was mainly concerned with the lack of lasting results from all forms of treatment. He denied that the disease is self-limited, though this has been strongly asserted. There are periods of latency when, though the patient is perhaps atrociously mutilated, the progress of the disease seems to have been arrested; but a cure, in the proper sense of the term, does not take place.

Professor Hutchinson, on account of indisposition, was unable to be present, and so his paper was read for him. It consisted of a reassertion of his favorite theory, that leprosy is due to the consumption of fish, especially salt fish, in certain stages of decomposition.

Professor Neisser spoke of the recent work in his clinic

at Breslau, by which it had been demonstrated that thousands of bacilli are given off from the bodies of lepers; that they are discharged in the breath, and exist in large numbers in all the secretions, and in the scrapings of the skin.

Professor Neumann of Vienna considered that the seeming spread of leprosy in certain countries during recent years is really due to the fact that atypical or abortive cases are better and more easily recognized, owing to a more accurate knowledge of the disease, and so are reported more faithfully.

Professor Petersen of St. Petersburg mentioned the spread of leprosy among the poorer classes of Russia, and considered it practically demonstrated that the spread of the disease is due to contagion, although it often requires a long time after exposure before the symptoms are manifested.

The third day was devoted to a discussion of the following questions: (1) "How Far Are We Justified in Considering the *Lepra Bacillus* as the Cause of the Disease?" and (2) "What Are the Ways of Inoculation?"

The reading of papers was not allowed, any one having had the opportunity to send communications before the meeting. These were placed in the hands of the members in the form of a volume of preliminary transactions. This excellent rule (eminently commendable to other medical societies) secured two noteworthy results: (1) The presence of the members at the sessions in order to follow the discussions of questions in which they were interested; (2) lively discussions replaced the dreary reading of long-winded papers, which often make medical meetings such a bore.

Practically all the authorities were agreed as to the specificity of the bacillus of Hansen. Professor Neisser has found almost invariably, in cases of anesthetic leprosy which had been examined thoroughly, that the bacilli are to be found in the nerves. As to whether the neuritis thus caused is centripetal or centrifugal, ascending or descending, is not so easy to decide. Great care is required in distinguishing anesthetic leprosy from the macular, erythematous patches of tuberculous leprosy before the surface elevation occurs. In these latter the demonstration of the bacilli is comparatively easy. As to whether the demonstration of the bacillus is necessary for assured diagnosis, authorities seem to be divided. Kaposi considered the finding of the bacillus an assistance rather than a criterion. He showed colored plates of three cases of papular leprosy in which, though he had been unable, even with the assistance of so skilled a pathologic anatomist as Professor Paltauf of Vienna, to find bacilli in excised portions of tissue, he considered the clinical characteristics sufficiently typical to justify the diagnosis. Hansen, Ehlers, and Arning, after a careful examination of the pictures, said they did not consider the cases to have been leprosy. The French leprologists seemed to be of the same opinion, and Von Dühring of Constantinople considered them very doubtful. Unna said that he thought the pictures were representations of true leprosy, and that it is in the variety of the disease illustrated that the demonstration of the bacillus is most difficult. With

his new technic—*careful* discoloration in nitric acid and counterstaining with one-per-cent. orcein solution, most of the difficulties vanished. Doutrelepon insisted that in such cases a large number of sections must be examined. Generally the conclusion seemed to be that in beginning cases and in atypical abortive forms of the disease the finding of the bacilli is almost absolutely necessary to justify a diagnosis.

As to the conveyance of the infection, some startling observations were detailed in regard to the number of bacilli given off from a single leper. These communications formed the most striking addition to the present knowledge of leprosy. Sticker of Giessen had found an abundance of lepra bacilli in the nasal secretion of 140 out of 153 lepers examined. They occurred even at times when there did not seem to be any leprosy lesions in the nose. Weber of Halle had found an enormous number of bacilli in scales scraped from the skin of lepers, many of which were about ready to drop off. He had found them in the saliva, in the sweat, in the tears, and in the hair.

From Neisser's clinic, Schæffer reported that he had calculated that a leper gave off 150,000 bacilli per hour. A cover-glass held before the patient while he read aloud would be covered with bacilli, and they extended to a distance of $1\frac{1}{2}$ meters from the patient. The most careful antiseptics of the mucous membranes, the use of bichlorid of mercury and nitrate of silver, did not cause them to completely disappear, though it greatly lessened their number. Professor Petersen considered that an examination of the nasal secretion for bacilli often made a positive diagnosis possible at an early stage of the disease. Jeanselme considered the nasal secretion diagnostic in most cases.

The third day was devoted to the following subjects: (1) "Pathologic Anatomy and Histology of Leprosy." (2) "The Rôle of Heredity in the Etiology of the Disease." (3) "Emigration and Immigration in their Relation to the Spread of the Disease."

Before the regular discussion began Professor Virchow, who acted as President of the conference, talked on "Pre-Columbian Leprosy in America." He considers that the mutilations seen in certain ornamental figures, found on what is evidently pre-Columbian pottery, point to the existence of leprosy on the American continent before the Spanish discoveries. There is no other disease which could produce the mutilations of the feet observed in the figures. The nasal mutilations point to lupus rather than to leprosy, but Professor Virchow called attention to certain faces in Professor Lassar's collection of wax models of Norwegian lepers which very closely resemble those found on the pottery.

As to the gross pathologic anatomy, Professor Glück showed some skulls which make it clear that changes in bones may be induced by leprosy, though this is usually denied. The lesions are commonly those of a rarefying osteitis, though some signs of inflammatory neoplastic changes may also be noted.

The anatomy of anesthetic leprosy, and the existence of nodular nerve enlargements growing fewer centripetally

seem to point, in Professor Babes' (Bucharest), opinion to a neuritis ascendens, and such he considered leprous neuritis to be. Of the bacilli themselves, Professor Babes showed a number of specimens which exhibited the rosette form, the radii with clubbed ends, which is considered so characteristic of actinomycosis. He also exhibited some specimens of tubercle bacilli with the same peculiarities, and considered such appearances characteristic of all the infectious granulomata with whose causative agent we are familiar.

In discussing the place of the bacilli with regard to the cells, Babes precipitated the old controversy as to whether the bacilli are only extracellular or may also be found within the cells. Almost alone, Unna insisted that the bacilli are never intracellular. As to the specimens exhibited, in which it was claimed that the bacilli could be seen within the cells, he considered it an optical delusion, and that the cells really occupy the extracellular lymph space above the cell. The discussion became very warm, but no admissions were made on either side. Neisser insisted that it is sheer obstinacy to maintain the extracellular opinion in view of the specimens to be seen around the room. Unna said that when others had examined lepra specimens as long as he had they too would find his position easier to understand, and that in this, as in other things when he had stood almost alone, further investigation would show, he felt sure, that his opinion was correct. During the recess the specimens were examined very carefully by a number of experts, Professor Virchow being among the number, and all seemed to agree that the bacillus might be intra- as well as extracellular.

As to the Rôle of Heredity, there was practical unanimity of opinion that it counted for nothing in the spread of the disease. There was a complete reversal of the formal decision of the Royal College of Physicians of London, which just thirty years ago absolutely pronounced against the contagiousness of the disease. There were a few non-contagionists from the East. Zambaca Pacha's (Constantinople) paper, published in the preliminary transactions, insisted that heredity is the only etiologic factor in the causation of the disease, and Sachs of Beyrout supported this opinion at the Congress, but every one else opposed it. Alvarez, from Honolulu, had never seen a leper under 3½ years of age, and Dyer's (New Orleans) statistics showed that leprosy in Louisiana, instead of remaining among the French and the descendants of the Acadians, as it would have done if hereditary, had spread to immigrants, and now there are more German than French lepers in the State. As to emigration and immigration, all were agreed that these are the usual media for the spread of the disease. Hansen told of his trip to our American Northwest where lepers from Norway had gone. He had not found any leprosy which could be considered hereditary, though he had seen some cases which seemed to be due to contagion.

The fourth day the conference discussed "The Place of Leprosy among the Infectious Diseases and Its Relation to Syringomyelia, Morvan's Disease, and Ainhum," and "The Therapy, Especially the Serum-therapy, of Leprosy."

Professor Zambaca Pacha of Constantinople, in a long

communication printed in the preliminary transactions of the conference, maintained that not only are syringomyelia and Morvan's disease abortive types of leprosy, but that scleroderma, sclerodactyle, Raynaud's disease, ainhum, morphia, and progressive muscular atrophy are also often of leprous origin. Very few, even those from the East where the frequency of lepra makes every trophic cutaneous change a subject of suspicion, went as far as this. Von Düring of Constantinople found under treatment at the Charité, in the out-patient department of Professor Jolly's service, two cases which had been diagnosed as syringomyelia, and he exhibited the patients before the conference. Many of the leprologists were inclined to pronounce the disease leprosy. In general, the trend of thought seemed to be that such cases should be regarded with suspicion, and the bacillus carefully searched for. The finding of the bacillus makes an immediate positive diagnosis possible, but only further observation of the course of the disease could assure a negative diagnosis.

Jeanselme's position as regards Morvan's disease was generally accepted. He had been unable to find bacilli in the original cases of Morvan's disease in Brittany after most careful search, and believed there was question of its being a nervous, trophic affection, not a contagious or hereditary disease. In general, it was considered possible, however, that sporadic cases of leprosy could be found in the midst of otherwise healthy communities where leprosy had never occurred. The cause is to be found in some contact with lepers on the part of the patient. As the contagion only reveals itself after years, physicians must be ever on their guard in suspicious cases.

As to serum-therapy, very little that was encouraging came from Europe. Carrasquilla's serum had been used in Paris, Dorpath, Berlin, and in Denmark, always without success, and in some cases with the production of dangerous symptoms. Dr. Carrasquilla attributes the non-success of his serum in Europe to some chemic change which occurs in it during the long voyage. Serums prepared according to his method here in Europe, in at least one case, seem to have given no better results. The novelty of Professor Dyer's (New Orleans) method of treatment and the promising results of the preliminary report attracted considerable attention. He uses Calmette's antivenin, the antidote for snake-bite, obtained by inoculation of the virus into animals.

Hansen, Doutrelepont, and Peterson insisted on the rôle of suggestion in the improvement of lepers at the beginning of a new treatment, and warned against the acceptance of therapeutic results which had not stood the test, not of months or even a year, but at least of four or five years.

As regards other therapeutic measures, Besnier considers oil of chaulmoogra almost a specific when combined with electrolysis of the tuberculous lepra patches; it has effected some striking cures in his hands. Neisser has seen iodine do good for a time, but recurrences are noted. In Unna's experience, iodine preparations have also accomplished something. Both believe in cauterization of the local lesions, Neisser with nitric acid.

In Norway injections of the soluble salts of mercury is

the favorite treatment, but the symptoms recur with this as with other treatments. The general opinion seemed to be that some combination of iodine and mercury used intermittently, as for syphilis, constitutes the best treatment known.

Professor Hallopeau read a paper on leprosy in Paris. There have always been a number of lepers under treatment in Paris, and of late years this number has largely increased. There has never been a case of contagion observed, though isolation is practically *nil*, and immense numbers of lepra bacilli have been demonstrated by Janssens to be given off in the secretions of the lepers. He considers that in the climate of Paris the vital resistance is such that contagion is practically out of the question, and that lepers may be treated freely in hospitals in temperate climates without danger of contagion.

The last two days of the conference were taken up with the discussion of the following subjects:

(1) "The Isolation of Lepers and the Best Regulations for the Purpose." (2) "The Best Manner of Establishing Lazarettoes." (3) "The Founding of Leper (Philanthropic) Societies." (4) "The Establishment of a Permanent International Committee." (Resolution of Dr. Ashmead of New York.)

All were agreed that isolation is the ideal means to eradicate the disease. Hansen's resolution, "that isolation is the best means of preventing the spread of the disease, and that the system in vogue in Norway is recommended to all nations," was unanimously adopted.

By this system those who are sufficiently well-to-do to be able to segregate themselves in their own houses according to law, are allowed to do so. All others must go to a lazaretto. Dr. Ashmead's resolution was considered inopportune. Professor Neisser's resolution for the appointment of a permanent committee with power to form a lepra society was adopted.

SOCIETY PROCEEDINGS.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Twenty-fifth Annual Meeting, Held at Philadelphia, October 26, 27, 28, and 29, 1897.

FIRST DAY—OCTOBER 26TH.

MORNING SESSION.

THE meeting was called to order by the President, DR. HENRY B. HORLBECK of Charleston, S. C., after which a business session was held. Sixty new members were elected, and the reports of the various committees were read. A new special committee on "Demography in its Sanitary Relations" was appointed, and a resolution adopted to the effect that the supervision of city water supplies should be vested in properly constituted boards composed of sanitarians.

DR. FREDERICK MONTIZAMBERT, General Superintendent of Quarantine of the Dominion of Canada, read the report of the "Committee on Steamship and Steamboat Sanitation," in which special attention was called to the necessity of freely exposing unlaundried bedding—

mattresses, pillows, and blankets—to the sun and air after each trip. Reference was also made to the danger incurred by the traveling public of contracting pulmonary tuberculosis from fellow-passengers, who, in their expectorations, scatter broadcast infectious material, and it was suggested that all steamboat saloons be supplied with proper receptacles containing a disinfection solution, and, furthermore, that expectorating upon the decks of vessels carrying passengers be strictly prohibited.

A paper, entitled

A CONTRIBUTION TO THE STUDY OF YELLOW FEVER FROM A MEDICO-GEOGRAPHICAL POINT OF VIEW

was read by DR. EDUARDO LICEAGA, President of the Supreme Board of Health of Mexico, and DR. JOSÉ RAMÍREZ, Secretary of the same board. The intention of the authors evidently was to combat the idea that yellow fever is epidemic along the whole Gulf Coast, and the statement was made that at the port of Vera Cruz only three cases occurred during last summer. It was also shown that special care is taken by the Mexican Board of Health to prevent the importation of the disease from the countries of Central America, where it is endemic. The paper asserted that no source of yellow fever exists on the Pacific Coast of the Mexican Republic, and that whenever a suspicious case is reported the Board sends an expert to make a thorough investigation. In this way many supposed cases of yellow fever had been proved to be a variety of fever which assumed a typhus form, and, moreover, that no new cases of this disease have appeared since the first of October. Reference was also made to the difficulty which exists in establishing a positive diagnosis between genuine yellow fever and certain forms of paludic infections which in hot climates often assume the serious characteristics of the former disorder. The paper closed with the statement that Vera Cruz, which has not suffered from yellow fever, is now quarantining against the United States, and has at the present time in the lazaretto of Sacrificio a steamer which recently arrived there from Mobile, Ala., with three cases of the disease on board.

DR. WILLIAM BAILEY of Louisville, Ky., remarked that it is indeed a reversal of the usual order of things to have Mexico guarding against the introduction of yellow fever from the United States. He also spoke of the doubt which exists in New Orleans as to the correctness of the diagnosis in many cases on account of the low mortality (eleven per cent.) which has marked the course of the present epidemic. He said that the first case which occurred in Louisville was imported from Ocean Springs, Miss. The patient referred to displayed unmistakable symptoms of yellow fever, and the disease was diagnosed as such by the physicians in attendance. He was removed from his hotel to a private sanatorium where he died, and was quietly buried without alarming the people. Notice was at once sent to the health authorities of New Orleans, and they were advised to investigate the disease at Ocean Springs. Subsequently, Dr. Oliver and his staff went from New Orleans to the former place and decided that the disease was not yellow fever in spite of the very positive diagnosis which had been made in Louisville.

Later new cases developed at Ocean Springs, and the true nature of the disease was recognized. Meanwhile precious time had been lost, and the disease had been scattered in all directions.

DR. SAMUEL H. DURGIN of Boston said that the lesson to be learned from the present epidemic is the importance of studying all suspicious cases coming from the Gulf Coast, and added that the United States Government could save money in no better way than by assisting the medical profession to discover a means by which a correct diagnosis of yellow fever may be made.

DR. P. H. BAILBACHE of Stapleton, Staten Island, N. Y., remarked that if Sanarelli's investigations are correct, a basis has been formed upon which a correct diagnosis may be made.

DR. BAILEY expressed the opinion that the bacillus for whose discovery Saranelli is receiving the credit is in reality the identical one which was isolated by Dr. Sternberg, and that too much could not be said in praise of the latter's work in this line.

As the topic is one of so much general interest it was decided to devote more time to its discussion than the morning session allowed, and it was made the special order of business for Friday afternoon when it was expected that Dr. Sternberg would be present. After the adjournment of the morning session many of the members visited an exhibition of disinfecting-agents which was held in Horticultural Hall. The principal feature of this exhibition was the new disinfectant formaldehyde, which is claimed to be more penetrating and more powerful than corrosive sublimate, or any other antiseptic. Six generators were shown which will produce the formaldehyde gas either from a solution or from the drug in solid form. A number of disinfectants and disinfecting-machines were on exhibition, and the Boards of Health of all the large cities of the country were represented by apparatus showing the methods of disinfection employed by each.

The evening session was devoted to the President's annual address.

SECOND DAY—OCTOBER 27TH.

MORNING SESSION.

A resolution was adopted authorizing the appointment of a committee of five to carry out the recommendations made by the President in his address, with reference to the investigation of the causes of yellow fever.

The report of the Committee on Pollution of Water-supplies was then read by Assistant Surgeon-General CHARLES SMART, U. S. A., of Washington, D. C., who said that the work of the committee had chiefly been in the direction of perfecting methods of bacteriologic research. He referred to the difficulty of securing a sufficient number of men to do the work, for the reason that the students of bacteriology in America are so busy keeping up with the advances of this branch of science that they have no time to devote to the work of the committee. Furthermore, he asked that the committee be discharged from its duties and a new committee appointed which shall consist of two men who are familiar with municipal water-sup-

plies, two who have a knowledge of the chemic aspect of the subject, and two who are well versed in its bacteriology.

The report of the Committee on Disinfectants was then read by DR. FRANKLIN C. ROBINSON of Brunswick, Me. The report spoke most highly of formaldehyde as a disinfectant, and referred to the fact that only a year ago it was practically unknown in this country, while now it is in general use. He expressed the opinion that there is still much to be learned about this agent, and predicted that as great and even greater progress would be noted in the coming year as had been seen in the one just past.

DR. FRANK W. WRIGHT of New Haven, Conn., then read a paper, entitled

DIAGNOSIS OF SMALLPOX.

The author emphasized the great importance of making an early diagnosis, which next to vaccination is the most essential factor in preventing the spread of the disease. This is not always easy, because in these days of general vaccination, a typical case of smallpox is rarely seen, the vast majority of these cases being modified by former vaccina are really cases of varioloid; in other words, modified smallpox. This modification, unfortunately, is not uniform in all cases and the responsibility of making an official diagnosis is very great, and is felt by all health officers. As many practitioners of medicine have never seen a case of smallpox, and few have seen a sufficient number to be familiar with the appearance of the disease, whenever a physician sees a patient with a suspicious eruption he immediately informs the health authorities, upon whom he shifts the responsibility of making the diagnosis. The health officer is thus placed in a very trying position; to err on either side is fatal to future success. If he fails to recognize a case of smallpox and the disease is spread, he is subjected to most severe criticism, and most likely loses his position. While, on the other hand, if he should be unfortunate enough to pronounce as smallpox some disease which resembles the modified form of that disorder, he is just as severely criticized, and may have to defend himself in a suit for damages.

AFTERNOON SESSION.

DR. A. WALTER SUITER of Herkimer, N. Y., read a paper, entitled

THE BARBER-SHOP AS A MENACE TO THE PUBLIC HEALTH.

The author said that the time has now arrived when the attention of the Association and, through it, that of the public health authorities in general should be called to that part of hygiene which applies to the barber-shop. That this common mode of infection should have for so long a time escaped attention in these days of asepsis and antiseptics, may be noted as one of the most contradictory circumstances of a time in which the sanitary relations of most, if not all, public occupations are carefully investigated and restricted. The first attempt of modern times to sanitarily regulate the barber-shop was made only recently in Paris, where an order was issued requiring that specific rules of asepsis and disinfection shall be observed. Only combs of metal, which can be sterilized, are per-

mitted, and all other instruments, as far as possible, must be of metal. These must be subjected to a temperature of $100^{\circ}\text{C}.$ — $212^{\circ}\text{F}.$ —before and after use. Shaving brushes must be washed before and after use in boiling water, and the hands of the barbers thoroughly cleansed before passing from one patron to another. Sterilized towels are also to be used, pulverizers are to replace the powder puffs, and hair which is removed is to be immediately disinfected and taken out of the shop.

DR. LEONARD PEARSON of the Veterinary Department of the University of Pennsylvania, then read a paper on

METHODS OF MEAT INSPECTION.

In many of the countries of Europe during the last century laws were passed to provide for the inspection of meat, but it is only within recent years, since the bacterial origin of many diseases has been demonstrated, and the relation existing between many of the diseases of man and animals has been established, that the importance of rational meat inspection has been recognized. At the present time all the countries of Continental Europe and the British Isles have a system of meat inspection, which, although incomplete in some places and in some details, is sufficient to protect the consumer from the numerous maladies which may be contracted by eating the flesh of diseased animals. The system which has proven most satisfactory in Europe includes the establishment of a municipal abattoir under the direction of a veterinarian trained in meat inspection, and provides that all animals shall be slaughtered in this establishment. These animals are examined while living and after they are killed. Both inspections are necessary because certain conditions, such as fever, fatigue, exhaustion, starvation, and excitement, which would have an effect upon the meat can only be detected during life. After the animal is slaughtered its organs are examined for evidences of diseases which are directly transmissible to the consumer, parasites which may be injurious, and other conditions which render the meat indigestible or toxic. Germany has more than six hundred of these municipal slaughter-houses, the facilities of which the butchers enjoy by paying a reasonable rental.

The author said that in some American cities, meat inspection is carried out upon good principles; in many, however, of which Philadelphia is one, the inspection of meat is based upon entirely different lines. The meat trade is governed by laws which forbids the sale of any meat which is diseased or unwholesome, it being assumed that the butcher is capable of determining this point. Detectives and police officers are appointed to visit the slaughter-houses, markets, and butcher-shops, to look for diseased meat. If any is found, a veterinary officer is called in to condemn it. This system is complicated and objectionable; if the supervision were properly carried out it would require as many inspectors as there are slaughter-houses. A large municipal establishment, with the cooperation of the butchers, can be conducted on a paying basis; for the rentals received from the butchers cover the running expenses. It is also an advantage to the butcher for it costs him less than it would have his own slaughter-house.

DR. EDWARD JACKSON of Philadelphia then read a paper, entitled

EYE-STRAIN FROM POOR WINDOW-GLASS.

The author referred to the eye-strain caused by astigmatism and the resulting headache and nervous symptoms, and pointing out that the same effect may be produced in normal eyes by defective window-glass. Glass in which there are irregularities of thickness acts like a lens, and its bad influence is intensified by the eye having to look through different parts thus causing different degrees of strain and making it impossible for the eye to properly adjust itself. Even comparatively slight defeats in glass will cause eye-strain similar to that of astigmatism. The use of plate-glass which is entirely free from these defects should be required. This is one of the few luxuries whose effects are entirely beneficial instead of being harmful. Its use in all public conveyances is especially to be desired, as defective window-glass is one of the principal causes of "car-sickness" from which so many people suffer.

REVIEWS.

THE SEQUELS OF DISEASE, BEING THE LUMLEIAN LECTURES (1896), TOGETHER WITH OBSERVATIONS ON PROGNOSIS IN DISEASE. By SIR DYCE DUCKWORTH, M.D., LL.D., Fellow and Treasurer of the Royal College of Physicians; Physician and Lecturer on Medicine, St. Bartholomew's Hospital. London, New York, and Bombay: Longmans, Green & Co., 1896.

THE eminent clinician, the author of these essays, rich in observation and study, begins with a consideration of the sequels of the "Specific Contagious Diseases," and points out that, paradoxical as it may appear, persons rarely die of the disease from which they suffer. Considering these diseases then, he tells in the choicest of words the well-known after-results of the infectious and contagious diseases. He mentions three forms of sequelæ which may follow influenza, the thoracic, the gastrointestinal, and the nervous. Almost an entire lecture is occupied by a consideration of the effects of syphilis. The volume closes with a most readable chapter on "Prognosis in Disease," in which the author dwells upon the desirability and necessity of cultivating the art of prophecy in the treatment of diseases.

The work is charmingly written, abounds in evidence of scholarship and learning, and is a valuable addition, in every sense, to medical literature. A copious index is appended to the book, which is very handsomely printed on heavy paper.

A COURSE OF PRACTICAL HISTOLOGY. By EDWARD ALBERT SCHAFER, LL.D., F.R.S., Jodrell Professor of Physiology in University College, London. Second edition. Philadelphia and New York: Lea Brothers & Co., 1897.

THIS book fulfills its aim. The author tells us in his preface that it is his intention neither to give an exhaustive

account of all modern histologic methods, nor to describe in detail the appearance of histologic specimens. He aims rather to furnish the student the means of conducting histologic research without the constant presence of a teacher. In carrying out this line of thought, he has recorded in simple, admirable English, the recognized methods of fixing, staining, cutting, and mounting. Although some of the methods employed in special research are not found here, the work contains all that a student or a general practitioner can desire in the way of histologic technic. The histologic elements of the human body are taken up in order, beginning with the blood, considering next the visceral and peripheral organs and their ultimate divisions and ending with the organs of special sense. A clear and concise introduction deals with instruments and general histologic methods.

We know of few books which compare with this for thorough usefulness. The former edition has long been a laboratory favorite, and we hope that the present one will soon be exhausted. The book is handsomely printed and profusely illustrated.

INJURIES AND DISEASES OF THE EAR, BEING REPRINTS OF PAPERS ON OTOTOLOGY. By MACLEOD YEARSLEY, F.R.C.S., Fellow of the British Laryngological, Rhinological, and Otological Associations; Surgeon in Charge of the Department for Diseases of the Throat, Nose, and Ear at the Farringdon Dispensary. London: The Rebman Publishing Co., Limited, 1897.

THIS little collection of reprints contains a number of interesting papers on special subjects of otology, ranging from "An Artificial Membrana Tympani" and "The Use of the Pneumatic Aural Speculum," to the "Care of the Ear in Children" and "Aural Reflexes." The first-mentioned paper, treating of the improvement of hearing by the support of an "artificial drum" in cases of old, nonpurulent catarrh with a lax membrane, deals attractively with the history of this subject.

The chapter on "Foreign Bodies in the Ear and Their Treatment," and that advising "What Not to Do in Diseases of the Ear," are of value from a practical standpoint, and while they contain nothing original, sum up in a concise and lucid way the precepts best worth following. The volume, which appears in attractive guise, is marred by inferior presswork, blurred print, and inadequate spacing being particularly noticeable.

THE MIDDLESEX HOSPITAL, W. Reports of the Medical, Surgical, and Pathological Registrars for the Year 1895. London: H. K. Lewis, 1896.

THE Middlesex Hospital reports are well-known for their scientific value. The present volume is no exception. It embraces, aside from necessary statistics, special articles on exceptional and interesting cases, and a full reference to fatal issues of disease. The report of the pathologist is scientific, interesting, and complete. It is a pity that this example cannot be imitated in this country, so that instead of learning annually how many cakes of soap or flat-irons Mrs. X. has presented, we might learn some-

thing of what our hospitals are actually accomplishing in the treatment and cure of disease.

SURGICAL HINTS FOR THE SURGEON AND GENERAL PRACTITIONER. By HOWARD LILIENTHAL, M.D., Assistant Attending Surgeon to Mt. Sinai Hospital, New York City. New York: International Journal of Surgery Co., 1897.

THE author of this book has compressed into a few pages facts and suggestions which only the experience of years can teach. It is a work which can be perused with profit by those who perform minor, as well as major surgical operations. It is concise, capably written, and full of valuable suggestions. Dr. Lilienthal has done the profession a service by giving it the results of his experience in such attractive style.

THERAPEUTIC HINTS.

Iceland Moss as an Anti-emetic.—For this purpose the dose is *m. x* to *3 i* of the tincture, three times daily before meals. It is chiefly recommended for the persistent vomiting which occurs in uremia, polyneuritis, chlorosis, the dyspepsias, cancer of the stomach, and during the gastric crisis of tabes. It is believed that it will prove useful in the vomiting of pregnancy.

For Chlorosis the following combination is highly recommended:

℞ Tinct. ferri. perchlor.		3 ii
Spts. ætheris sulph.		3 ii
Tinct. nucis vom.		3 ii
Tinct. quassiae		3 vi.

M. Sig. A teaspoonful in half a glass of water, twice daily, before meals.

For Subinvolution of the Uterus.—

℞ Strychninæ sulphatis		gr. ½
Quininæ sulphatis		gr. xx
Ext. ergotæ		gr. x.

M. et. ft. pil. No. x. Sig. One pill three times daily.

For Uremia.—

℞ Ext. pilocarpi alc.	} aa	gr. xv.
Ext. scillæ		
Res. jalapæ		
Res. scammonii		

M. et. ft. pil. No. xx. Sig. Four or five pills daily during as many days.

For Simple Tonsillitis.—

℞ Creolin		gr. xv
Aquæ destillatæ		O i
Aquæ menth. pip.		3 iii.

M. Sig. Use as a gargle.

For Tinea scycosis.—

℞ Naphthol		3 i
Saponis viridis	} aa	3 vi.
Cretæ præp.		
Sulphuris loti		
Lanolini		

M. Sig. Apply locally at bed-time.

THE MEDICAL NEWS.

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No. 20.

ORIGINAL ARTICLES.

RECENT RESEARCHES RELATING TO THE ETIOLOGY AND SPECIFIC TREATMENT OF YELLOW FEVER.¹

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In a paper read at the Twelfth International Medical Congress at Moscow during August of the present year, and published in the September number of *The American Journal of the Medical Sciences*, I have given my reasons for believing that the bacillus icteroides of Sanarelli, and a bacillus obtained by me from yellow-fever cadavers at Havana, provisionally named "bacillus x ," are identical. If the identity is not established, the claim of Sanarelli that his bacillus icteroides is the specific infectious agent in yellow fever cannot, in my opinion, be admitted. For this specific infectious agent must be the same in yellow fever occurring at Havana as for that occurring at Rio de Janeiro. My extended and painstaking bacteriologic researches in a series of forty fatal cases occurring in the city of Havana during 1888 and 1889, and three occurring in Decatur, Ala., during the epidemic of 1888, show that no micro-organism, other than my bacillus x , develops in the culture media usually employed by bacteriologists, except the colon bacillus and a few other species exceptionally found and excluded from consideration for reasons stated in my report on "The Etiology and Prevention of Yellow Fever," published during 1890. In summing up the results of my investigations I refer to the bacillus x as follows:

"Among the facultative anaerobics is one—bacillus x —which has been isolated by the culture method in a considerable number of cases of yellow fever, and may have been present in all. This bacillus has not been encountered in the comparative experiments made. It is very pathogenic for rabbits when injected into the abdominal cavity. It is possible that this bacillus is concerned in the etiology of yellow fever, but no satisfactory evidence that such is the case has been obtained by experiments upon the lower animals, and it has not been found in such numbers as to warrant the inference that it is the specific infectious agent. All other micro-organisms obtained in pure cultures from yellow-fever cadavers appear to be excluded, either by having been

identified with known species, or by having been found in comparative researches made outside of the area of yellow-fever prevalence, or by the fact that they have been found only in small numbers and in a limited number of cases."

The bacillus of Sanarelli readily grows in the culture-media which I employed in my researches, and if present in the blood or tissues of the yellow-fever cadavers examined by me at Havana, I could not have failed to find it. In stating conclusions in my official report I say: "The specific infectious agent in yellow fever has not been demonstrated." It will be observed that I say "has not been demonstrated." I do not say that it has not been discovered, for I suspected at that time that my bacillus x was possibly the specific yellow-fever germ.

The name of Eberth is commonly associated with the typhoid bacillus, but Eberth was only successful in finding this bacillus in the lymphatic glands or in the spleen in eighteen out of forty cases in which he searched for it, and it was not until four years later (1884) that Gaffky obtained it from the spleen of typhoid cadavers in twenty-six out of twenty-eight cases examined by him. The demonstration that this is the specific infectious agent of typhoid fever was evidently not made by Eberth, but depends upon the researches of Gaffky, Fränkel, Simmonds, and other more recent investigators.

Klebs is supposed to have first observed or discovered the diphtheria bacillus, but Löffler demonstrated it to be the specific infectious agent in this disease, and this bacillus is spoken of as the Klebs-Löffler bacillus.

Continental bacteriologists have not been so particular in recognizing the discoverer of the micrococcus of pneumonia, which was isolated and described by me in 1880, and was observed in pneumonic sputa by Talamon in 1883, by Salvioli during 1884, and by the author in 1885, before the publication of Fränkel's first paper detailing the results of his investigations. As a matter of fact, the demonstration that this micrococcus is concerned in the etiology of pneumonia depends upon the investigations of Talamon, Salvioli, Sternberg, Fränkel, Weichselbaum, Gameleia, and others, and the common practice of referring to it as Fränkel's pneumococcus is an injustice to the discoverer, and to others who have had a share in demonstrating its rôle in the etiology of croupous pneumonia.

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Neisser discovered the gonococcus, and named it, but he did not present any satisfactory experimental evidence that it is the specific germ of gonorrhea. This demonstration was made by Bumm and others. However, Neisser's name, alone, is usually mentioned in connection with this germ.

If my bacillus *x* and the bacillus *icteroides* of Sanarelli are proved to be identical by the experiments of Sanarelli and this bacillus is demonstrated to be the cause of yellow fever, Sanarelli will deserve full credit for the demonstration, and I shall not be disposed to detract in the least from the praise due him for the success achieved as a result of his investigations. If, as he claims, he has obtained the final proof that this is the yellow-fever germ by producing the disease in man (five cases), as a result of the subcutaneous or intravenous injection of filtered cultures, I think we must accept these results as demonstrating the specific character of the bacillus in question. But without this final proof the demonstration would not be satisfactory, notwithstanding the pathogenic virulence of the bacillus when injected into several species of the lower animals. If it were constantly found in the blood and tissues of yellow-fever cadavers there would be little reason to doubt its specific character. But both my researches and those of Sanarelli show that, notwithstanding the most painstaking investigations, this bacillus has not been found in a considerable proportion of the typical fatal cases of yellow fever examined.

Sanarelli says: "According to the results of my researches, the isolation of the microbes of yellow fever is only possible in 58 per cent. of the cases;" and his paper, published in the *Annales de l'Institut Pasteur*, shows that his investigations were limited to eleven fatal cases. After having differentiated bacillus *x* from the colon bacillus, which it greatly resembles, I obtained it in about one-half of the cases studied by me in Havana during 1889. Sanarelli says, with reference to his failure to find his bacillus in a considerable proportion of the typical cases: "Its isolation often presents almost insuperable difficulties, due in part to the constant occurrence of secondary infections, and in part to its relative scarcity in the organism."

In the series of cases studied by me secondary infections were extremely rare. The colon bacillus was found in a considerable number of cases, but usually in comparatively small numbers, and there is no good reason for believing that the fatal result depended upon its presence. But for the fact that in the second case studied by Sanarelli, his bacillus was present in considerable numbers in blood extracted from the finger of the patient the evening before his

death, and also, after death, in the blood, spleen, liver, and other organs, it is quite probable that his attention would not have been attracted to this particular bacillus. In this regard this case is unique, both in the series of cases investigated by Sanarelli and in those studied by me; and if this is indeed the bacillus of yellow fever, it is evident that it is usually present in the blood or tissues of yellow-fever patients in very small numbers, or not at all.

In my report I suggest the possibility that the yellow-fever germ may multiply in the intestine, as is the case with cholera, and I say: "Finally we remark that many facts relating to the origin and extension of yellow-fever epidemics give support to the inference that the specific infectious agent is present in the dejecta of those suffering from the disease, and that accumulations of fecal matter and of other organic material of animal origin furnish a suitable nidus for the development of the "germ" when climatic conditions are favorable for its growth.

"There is no evidence that yellow fever is propagated by contamination of the supply of drinking-water, as frequently, and probably usually, occurs in the case of typhoid fever and cholera. Moreover, epidemics extend in a more deliberate manner and are restricted within a more definite area than is the case with cholera and typhoid fever. It is usually at least ten days or two weeks after the arrival of a vessel with the disease on board, before cases of local origin occur; and these cases occur in the immediate vicinity of the imported case or vessel carrying the contagion. When the disease has effected a lodgment, the area of infection extends slowly and usually has well-defined boundaries. In towns and cities having a common water-supply one portion remains healthy, while another, usually the most filthy, may be decimated by the scourge."

This hypothesis led me to make the following recommendation: "The experimental evidence recorded and the facts just stated seem to justify the recommendation that the dejecta of yellow-fever patients should be regarded as infectious material, and that such material should never be thrown into the privy-vaults or upon the soil until it has been disinfected."

Sanarelli reports his failure to find his bacillus *icteroides* in the contents of the intestine; but all bacteriologists will recognize the fact that the demonstration of a non-liquefying bacillus which resembles, both in its morphology and in its colonies, the colon bacillus, and which is present in comparatively small numbers in the contents of the intestines, might easily be overlooked even by one skilled in bacteriologic technic, and I cannot admit that Sanarelli's failure to find the bacillus in the contents of the in-

testine is satisfactory evidence that it was not present.

I obtained bacillus *x* in a certain number of cases from the contents of the intestines of yellow-fever cadavers; but it was present in comparatively small numbers, and I was more successful in obtaining it by inoculation experiments in guinea-pigs than in cultures made directly from material from the intestine. I suggest in my report that possibly yellow fever results from the absorption of a toxin produced during the multiplication of the specific germ in the alimentary canal. This, however, is only advanced as a hypothesis, which has some facts in its favor. If, as stated by Sanarelli, comparatively small quantities of a filtered culture of this bacillus will give rise to yellow fever in man when injected beneath the skin or directly into the circulation, this fact would appear to give additional value to the hypothesis. At all events, I think it would be very unfortunate if, upon the strength of Sanarelli's negative researches, sanitarians should neglect to disinfect the excreta of yellow-fever patients.

The fact that both Sanarelli and myself have failed in a majority of the cases studied to obtain this bacillus in cultures from the liver, the spleen, and other organs, or in thin sections made from portions of these organs preserved in alcohol, does not absolutely prove that the bacillus was not present in these cases. A few scattered colonies might easily escape observation, even in the most painstaking research, just as a few bacilli present in the intestinal contents might not be discovered by a competent bacteriologist after a protracted investigation by the plate method. The isolation of a non-liquefying bacillus is especially difficult on account of the presence of the colon bacillus in large numbers. If, for example, bacillus *x* was present in the proportion of 1-1000 of other non-liquefying bacilli, there would be but little chance of finding it by the use of plate-cultures.

All bacteriologists recognize the difficulty of isolating the typhoid bacillus from the dejecta of typhoid patients, and Gaffky has shown that in fatal cases in which the presence of colonies was not detected in the sections of the spleen, or in which such colonies were extremely rare, the bacillus could always be obtained by means of cultures. I had this fact in view in my researches made at Havana, and habitually introduced a considerable amount of material from the interior of the liver and of blood from one of the cavities of the heart into the various culture-media used in my investigations. I admit that a negative result does not prove the absence of bacteria capable of developing in these culture-media. Indeed, I obtained proof that the contrary is the case; for I invariably obtained various bacteria from cultures made from portions of liver or kidney pre-

served forty-eight hours in an antiseptic wrapping. Some of these were well-known bacilli, such as the colon bacillus, bacillus proteus vulgaris, and large anaerobic bacilli. Associated with these was bacillus *x*.

It is evident, then, that notwithstanding the negative results usually attending culture-experiments with blood from the heart or material from the interior of one of the organs principally affected, bacteria of different species were present in the liver and kidney in small numbers, and that they developed abundantly *post-mortem* when portions of these organs enveloped in an antiseptic wrapping were placed in an incubating-oven. This method was followed by Sanarelli, but he neglects to make any reference to the fact that I had employed it in an extended series of cases, or to my bacillus *x*, which is fully described in my official report, to which he apparently had access, although he makes serious mistakes in referring to my work. Thus, he says: "Dr. Sternberg of Baltimore, author of the most recent, the most rich, and the most methodical contribution to this disease known up to present time, declares that the specific microbe of yellow fever is yet to be found, and he affirms that the whole question is to be taken up *ab initio*."

This was not exactly my position, as witness the following quotation from the introduction to my report: "I have now commenced writing a report because I feel that an account of what I have been doing during the past two years is due, and not because I have brought my investigation to a successful termination, or because I feel that there is nothing more to be done."

"No one can regret more than I do that the question of the etiology of yellow fever is not yet solved in a definite manner, but I at least have not to reproach myself with want of diligence or failure to embrace every opportunity for pursuing the research. The difficulties have proved to be much greater than I anticipated at the outset. If the task before me had been to find an organism in the blood, like that of relapsing fever, or of anthrax, or an organism in the organs principally involved, as in typhoid fever, or leprosy, or glanders, or in the intestine, as in cholera, the researches I have made could scarcely have failed to be crowned with success. But this has not proved to be the case, and among the micro-organisms encountered there is not one which by its constant presence and special pathogenic power can be indisputably shown to be the specific agent in this disease."

Note that I say "among the micro-organisms encountered there is not one which by its constant presence and special pathogenic power can be shown

indisputably to be the specific infectious agent in this disease." But, as heretofore stated, I carefully described one particular bacillus, and in summarizing my results said: "It is possible that this bacillus is concerned in the etiology of yellow fever." Evidently it was my intention that subsequent investigators should consider this possibility, and if my work was well done, by approved methods, no one has a right to ignore it, and continued investigations by the same method cannot be considered as taking up the question *ab initio*.

Again, Sanarelli says: "Sternberg thinks that there is probably a localized infection having its principal seat in the *stomach*." This is a mistake. I have advanced the hypothesis that the germ of yellow fever may perhaps be located in the alimentary canal, as is the case in cholera, and that the symptoms result from the absorption of a very potent toxin produced by it. But this is only a suggestion, and I know of no evidence indicating that there is a localized infection of the stomach. I have carefully studied many stained sections of the walls of the stomach, and have never found any evidence of a localized infectious process, although "in a certain proportion of the cases there is evidence of inflammation, as shown by the presence of an unusual number of leucocytes in the submucous coat."

I say in my report: "The mucous membrane of the stomach is always found to be more or less hyperemic; the congestion commonly is not general, but is confined to smaller or larger spots or districts, in which it is observed to proceed from one or more centers. From these centers it extends or radiates in a lesser degree, either gradually to be lost or to pass over to another congested district. It is owing to this peculiarity of the congestion that it presents no uniformity of character, but is observed to spread irregularly over larger or smaller portions of the membrane (Schmidt)."

"The small intestine commonly contains more or less black matter, either fluid and resembling that found in the stomach, or mixed with mucus and smeared over the mucous coating, especially of the ileum. This, no doubt, comes partly from the stomach, but in other cases is due to passive hemorrhage from the mucous membrane of the intestine itself. This membrane presents arborescent patches of congestion, or portions of the canal may be uniformly red from hyperemia of the mucous coat; the color varies from pale red to a reddish brown, and is usually more marked in the lower portion of the ileum than elsewhere. The large intestine occasionally presents similar arborescent patches of congestion, but it usually has a normal appearance. Finally, we may say that the attention of pathologists has hereto-

fore been so largely taken up with the pathologic histology of the organs which present the most notable changes—liver and kidney—that the histology of the alimentary canal has been somewhat neglected, and further researches in this direction are desirable upon material obtained at the earliest possible moment after death."

If we admit the specific character of the bacillus under consideration, I think we must await further investigations before the question can be considered as definitely settled as to the locality in which it establishes itself in the body of an infected individual—whether in the organs involved, as claimed by Sanarelli, or in the alimentary canal, as suggested by me. But the most important question at present relates to the supposed specific character of this bacillus.

Experiments are now being made under my direction both with bacillus *x* and with cultures of the bacillus of Sanarelli, which I obtained through the courtesy of Dr. Roux during a recent visit to Paris. While I am not likely to have an opportunity to make experiments on man, I hope to make a careful comparative study of the pathogenic action upon dogs and guinea-pigs of bacillus *x* and the bacillus *icteroides* of Sanarelli. If identity is established and Sanarelli's results are confirmed, I shall be ready to accept this as the specific infectious agent in the disease under consideration. I desire to express my obligations to Dr. Ezra B. Wilson of the Hoagland Laboratory, Brooklyn, N. Y., for having renewed at regular intervals the cultures of bacillus *x* which I left in that laboratory more than four years ago. I myself maintained the cultures after leaving Baltimore for duty at San Francisco during 1890, until they were placed in the Hoagland Laboratory in 1892.

Serum Therapy.—The writer has long been of the opinion that the discovery of the germ of yellow fever would be likely to be followed by important practical results in prophylaxis and in the treatment of the disease. There was nothing irrational in Freire's method of inoculation but, unfortunately, he did not have at his command cultures of the specific infectious agent, and his statistics are entirely unreliable, as shown in my published report.

It is possible that the bacillus of Sternberg and Sanarelli may have been present in some of his impure cultures, before his visit to France, where these cultures were "plated" by Gibier (1887); but the micrococcus which he declared to be his "*cryptococcus xanthogenicus*" and upon his return from Paris presented to me as his yellow-fever germ, was the well-known and very common *staphylococcus albus*. Inoculations made by him in my presence in four in-

dividuals resulted only in a slight tumefaction and redness at the point of inoculation without any noticeable febrile reaction.

My own researches and those of Sanarelli show that yellow fever is not an acute septicemia, as might perhaps be inferred from the symptoms and course of the disease, and the inference, therefore, is suggested that the clinical phenomena and pathologic changes in the organs involved are due to the action of some potent toxin, produced by a specific micro-organism which has a more or less localized habitat in the body of an infected individual. This is now known to be the case in diphtheria and in cholera, and the deadly effects of the toxins produced by the diphtheria bacillus and the cholera spirillum may fairly be compared with the specific toxemia which we call yellow fever.

The recent experiments of Sanarelli appear to give substantial support to the inference that yellow fever is in fact a toxemia. Time and space will only permit a brief summary of the experimental results reported. In *Il Policlinico* of August 15, 1897, details are given of the experiments made upon man (five individuals) with filtered cultures of Sanarelli's bacillus icteroides. The amounts injected varied from 2 to 10 c.cm.

CASE I.—A subcutaneous injection of 2 c.cm. of a filtered culture gave rise to a slight febrile reaction, and to some tumefaction at the point of injection.

CASE II.—A subcutaneous injection of 5 c.cm. of a filtered culture caused a painful swelling at the point of injection, loss of appetite, an elevation of temperature reaching 38.6° C. (101.5° F.). A trace of albumin was found in the urine during several successive days. A second injection of 5 c.cm. after an interval of ten days caused an elevation of temperature and a slight tumefaction at the point of inoculation, which quickly disappeared.

CASE III.—The subject received an intravenous injection of 10 c.cm. of a filtered culture. This was followed within fifteen minutes by nausea and vomiting, general agitation, and pain in the lumbar region. Gradually the abdominal region became painful and the slightest pressure with the hands over the abdomen or in the lumbar region caused severe pain. The temperature, which before the injection was 37.1° C. (98.7° F.), rose within two hours to 101.3° F., and within four hours to 104.5° F. The patient complained of severe headache during the night, and continued to vomit. The following morning the temperature was normal; at 4 P.M. it rose to 101.3° F., and there was slight delirium; there was complete gastric intolerance and anuria. The liquid vomit had a pale coffee color, and upon microscopic examination was found to contain red blood-corpuses and leucocytes; it had an acid reaction. The anuria continued for two days, when a little turbid urine was obtained from the bladder; this was completely coagulated by heat. Delirium, interrupted by brief periods of coma, continued during the second day, after which the patient's condition improved and recovery took place. On the second day the sclerotics had an evident subicteric tint. On the second day an explorative puncture of the liver and kidney was made and some "juice" was obtained through the aspirating-needle. Under the microscope this was found to contain,

from the liver, hepatic cells in a profound state of fatty degeneration and, from the kidney, epithelial cells in a state of intense tumefaction and granular degeneration.

CASE IV.—Five cubic centimeters of a filtered culture was injected into the median cephalic vein. In this case also there resulted persistent vomiting, headache, fever, reaching 106.1° F., cephalalgia, muscular pains, diminished urinary secretion containing an abundance of albumin, and afterwards complete anuria, delirium, a subicteric discoloration of the skin and, on the second day, a condition of collapse developed, the pulse being imperceptible. However, the patient gradually rallied from this grave condition and made a good recovery. "Hepatic juice," obtained as in the previous case by aspiration, contained hepatic cells in a condition of "profound fatty degeneration."

CASE V.—An intravenous injection of 2 c.cm. of a filtered culture was made, November 26th, and two days later was followed by a second injection of 7 c.cm. A third dose of 15 c.cm. was given November 30th, and a fourth of 20 c.cm. December 3d. Each injection was followed by a febrile reaction, but this was greater after the first dose of 2 c.cm. than after the last dose of 20 c.cm.; this was also true as regards the other symptoms, thus showing the immunizing effects of the doses first administered. The initial dose gave rise to general malaise, cephalalgia, and a trace of albumin in the urine. After the second dose (7 c.cm.) there was a decided chill followed by fever, cephalalgia, and severe pains in the back and of the joints of the lower extremities. The third dose was also followed by a violent chill and general prostration and by a febrile movement less intense than after the second dose (7 c.cm.). In this patient a subicteric color of the skin, and especially of the conjunctivæ, was also developed. Blood taken from this patient December 9th, thirteen days after the first intravenous injection, gave a transparent serum having a lemon-yellow color. This serum mixed with a recent culture of bacillus icteroides in the proportion of 1:10 caused an arrest of movement and agglutination of the bacilli.

In a subsequent number (September 15th) of *Il Policlinico*, Sanarelli gives a detailed account of his experiments relating to immunity and serotherapy in the disease under consideration. In this paper the statement is made that blood-serum obtained from a yellow-fever cadaver produces, *in vitro*, when added to a culture of bacillus icteroides, the phenomena of arrest of motion and agglutination ("phenomenon of Grüber-Durham"), but the intensity of the reaction varies considerably. This serum injected into animals did not manifest any preventive power as regards the pathogenic action of the bacillus.

Serum obtained by venesection from a yellow-fever convalescent produced "very slowly" the same reaction. The simultaneous injection of this serum and of a culture of the bacillus did not preserve guinea-pigs from death, but when the same dose (2 c.cm.) was injected twenty-four hours before the injection of the culture, death did not result in most of the animals experimented upon—numbers not given. Antidiphtheritic serum, prepared in Dr. Sanarelli's laboratory, very promptly produced the "Grüber-Durham" reaction with bacillus icteroides

and "antityphoid serum" produced it in a partial manner, but normal human blood-serum had no effect. Attempts to immunize guinea-pigs by the injection of filtered cultures were not successful, and rabbits were immunized with great difficulty. Dogs were immunized by a series of inoculations with filtered cultures, first subcutaneously and later intravenously. At the end of two months they were able to withstand small doses of unfiltered cultures injected beneath the skin, and later intravenous injections, but at first these gave rise to vomiting, fever, and debility. It was only at the end of seven to eight months that they were able to withstand full doses of unfiltered cultures.

Horses could not be immunized by subcutaneous injections of cultures of the bacillus because these caused enormous tumefaction followed by ulceration at the point of injection. For the immunization of horses the following method was adopted: Doses of 5 to 10 c.cm. of a filtered culture were first given. These gave rise to a febrile reaction often lasting several days. Small doses of a filtered culture were then injected into a vein. After about two-months' treatment filtered cultures sterilized by ether were employed, and it was only at the end of five to six months that a small dose of an unfiltered culture could be given. The first dose of a living culture caused loss of appetite and a febrile reaction lasting from eight to ten days. The dose was increased by from 5 to 10 c.cm., and repeated at intervals. These experiments show that the immunization of the lower animals against the pathogenic action of this bacillus is attended with great difficulties, and is a tedious process.

At the time of the publication of his paper, Sanarelli had in his possession three dogs which were very well immunized. One of these had received 300 c.cm. of virulent culture in the space of eight months. Blood-serum from this dog caused arrest of motion and agglutination of the bacilli in a fresh culture when added to it in very small quantity. This serum saved eight out of ten rabbits inoculated with lethal doses of an unfiltered culture; but was not successful in saving the lives of inoculated guinea-pigs.

A horse subjected to the experiment received in the course of five months 29 c.cm. of filtered culture, 2640 c.cm. of culture sterilized by ether, and 35 c.cm. of living (unfiltered) culture. Serum from this horse had a "good preventive power for rabbits." To save a rabbit from a lethal dose of a culture of the bacillus it was necessary to administer twenty-four hours in advance of the inoculation about 5 c.cm. of the serum. Subsequently a serum was obtained which was effective in the amount of 0.5

c.cm., and which in the dose of 2 c.cm. injected forty-eight hours after inoculation, was successful in saving rabbits from the lethal effects of a full dose of a recent culture.

The painstaking experiments detailed by Sanarelli are most important and interesting, but it is evident that they must be followed by carefully conducted experiments upon man before we can be assured that his immunizing serum can be used with success in the prevention and treatment of yellow fever. If it proves to have specific therapeutic power we can scarcely doubt that the bacillus used in immunizing the animals from which the serum was obtained is in truth the yellow-fever germ.

Note.—Comparative experiments already made at the Army Medical Museum, by Major Walter Reed, Surgeon United States Army, show certain cultural differences between the bacillus *icteroides* of Sanarelli and my bacillus *x*. Whether these are simply due to the fact that bacillus *x* has been cultivated for eight years in artificial media, or are to be considered as evidence that we are dealing with two more or less permanent varieties of a single species, or are to be taken as evidence that the bacillus of Sanarelli is specifically distinct from my bacillus *x* can only be determined by further investigations, and especially by comparative experiments relating to the pathogenic power of the cultures obtained by me from yellow-fever cadavers in Cuba, and by Sanarelli from yellow-fever cadavers in Brazil. At present bacillus *x* is non-motile, while Sanarelli's bacillus is actively motile. But in my original cultures, as stated in my published report, bacillus *x* was motile. At present Dr. Reed informs me that the presence of flagellæ may be demonstrated by proper staining methods.

THE ETIOLOGY AND PATHOLOGY OF YELLOW FEVER.¹

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THE unfortunate circumstances that have called for the present gathering and have revived so much interest and attention in regard to an old enemy—whose existence the present generation had well nigh forgotten, or at least only remembered with indifference—evokes memories which bring us back to a similar occasion during the summer of 1878, when this identical organization called for a general meeting of the profession of this city, with the view of eliciting the opinions of the leading men of that memorable period as to the most effective means of

¹ Abstract of a paper read before the Orleans Parish Medical Society, September 11, 1897, and published in the *New Orleans Med. and Surg. Jour.*, October, 1897.

stifling the pestilence which confronted our people—a visitation which I most fervently pray will not find its parallel in the present outbreak. There are many veterans still among us who were witnesses to that fearful struggle which cost our devoted people over 4600 lives, and some of these are now recognized as Fellows whom we rejoice to welcome and honor in our councils.

I cannot refrain from making an allusion that the present crisis amply justifies. This is related to the fact that since 1879 the germ of yellow fever has never taken root in the city of New Orleans, and this simply because it was never allowed to reach our levees. Not only has the notion that yellow fever is endemic in this country been forever exploded by the immunity we have enjoyed during the past eighteen years, but the evidence furnished by the present outbreak at Ocean Springs is a demonstration in itself of the soundness of the sanitary principles applied at the mouth of the Mississippi River by the authorities for the exclusion of foreign pestilence since 1883.

I have always remembered the pregnant warning uttered long ago by the distinguished Griessinger, to the effect that “a series of years often pass during which yellow fever is scarcely observable in the very places it especially frequents; and this, though there may be no difference in the going and coming of unacclimated strangers. Then there is rejoicing over the presumed disappearance and destruction of the disease, and a triumph of sanitary police over it is claimed.” But the experience of New Orleans since 1879, with its total immunity and continuously increasing prosperity, tells us that this is no ephemeral or fictitious triumph, and that the protection which we have enjoyed has not been due to fortuitous circumstances and accidentally favorable conditions, but that it is entirely the result of the efficiency of the preventive measures employed. Therefore, if the modern generation of medical men in this city has been deprived of the opportunity of acquiring a *de visu* experience with the dread *typhus icteroides*, and has not been granted the doubtful honor of an introduction to “Yellow Jack,” it is due to the system of maritime sanitation established by the Louisiana State Board of Health at the mouth of the Mississippi; and I mean by this more distinctly the “Holt system” of maritime sanitation. As I mention the name of our honored Fellow, Joseph Holt, I feel that you will all agree with me that at no time is the praise of his splendid work more worthy of repetition than at this moment, when, in the very disaster which threatens us, we are compelled to recognize the triumph of his principles and methods.

I remember very distinctly that during 1877, 1878, 1879, and 1880 the lamented Bemiss taught us that

yellow fever was distinctly a microbic disease, and his manner of stating this etiology of yellow fever and the reasons for accepting it from simple *a priori* reasoning was so lucid and impressive that I believe it could not be better stated to-day. His teaching on this subject, which has been preserved in his most interesting contribution on yellow fever in “Pepper’s System of Medicine,” vol. i (1885), reproduces his presentation of the subject as we were familiar with it in his lectures. In my notes taken after the epidemic of 1878, more fully stated in the article referred to, which appeared during 1885, I find that he said: “The study of the yellow-fever poison after the *objective* method (microscopic, bacteriologic, etc.) has hitherto been unproductive of definite results. But when we turn to a *subjective* method of investigating that toxic agent which causes yellow fever, it is found to possess sufficiently well-marked characteristics to justify practically valuable conclusions.” Some of these characteristics or modes of behavior merit notice.

1. The human system is a field of reproduction and multiplication of the yellow-fever poison, and this is sufficiently established by two facts:

- a.* A person in the incubation stage of yellow-fever intoxication may be divested of all fomites and yet originate other cases after a developed attack.

- b.* The infection is intensified by the aggregation of the sick.

These propositions are indisputably true.

2. The poison or infection undergoes some change after leaving the human system.

This appears to be susceptible of proof, because communication from person to person is not a common event. When this does apparently occur, there is often very strong reason for belief that the contagion was resident in some fomites connected with the patient’s bed or clothing.

3. There are no sustained observations which prove that the yellow-fever poison is ever created *de novo*.

The autochthonous birthplace of the poison is unknown. The suggestion that yellow fever may have been one of the causes of death during the plague of Athens cannot be authoritatively denied.

This is not at all likely to be true, and, furthermore, the most recent investigations by learned Mexican and Spanish scholars prove that, according to Maya manuscripts, a fatal epidemic disease characterized by black vomit and other symptoms of yellow fever ravaged Yucatan and the regions of the Gulf Coast long before invasion of the Spaniards. Thus the American origin of yellow fever, which has been discussed since the days of Humboldt, is fully sustained.¹

4. Some of those conditions and circumstances which favor or retard the maturation of the yellow-fever poison outside of the human body are quite well understood. Hot, damp weather is most prominent among the cli-

¹ Dr. Carlos Finlay, *Cronica-Medico-Quirurgica* of Havana, May 15, 1897, and *Revista de Ciencias Medicas* of Barcelona, August 10, 1897.

matic conditions which are favorable to the growth of yellow-fever epidemics.

5. A freezing temperature ordinarily destroys the contagion of yellow fever; a high degree of artificial heat produces a similar result. It is highly probable that certain chemic results would also effect its destruction if brought into contact with it.

6. If yellow-fever fomites are hermetically inclosed in situations protected from cold or other agents which are destructive to their infection, vitality may be preserved for an undetermined length of time, and toxic qualities again made manifest when unacclimated persons (*i. e.*, those who have never had the disease) are exposed to it.

7. Yellow-fever poison possesses ponderability. This characteristic is so distinctly marked that it has been frequently termed a "groveling, low-lying poison."

8. It is incapable of being air-borne through any great distance, at least without being deprived of its toxic effect.

9. It is transportable in fomites through great distances, either on sea or land, but as often as its toxic effects are manifested after these transportations they are so uniform as to be promptly recognizable. A great number of different materials in common use may act as carriers of fomites, such as loose wool, cotton, hair, textile fabrics, ship ballast, and merchandise of various descriptions.

10. The preceding facts explain how the disease is spread, and why it is that it follows the lines of travel and commerce, and thus primarily attacks the seaports and towns situated on navigable streams and then follows the railroads to the inland towns.

11. These qualities of the yellow-fever infection taken collectively, and especially its faculty of reproduction (which only living organisms possess) furnish almost conclusive evidence that yellow fever is a germ disease produced by a specific *contagium vivum*.

Professor Bemiss shared in the general belief still sustained by the latest investigations—that "in the dissemination of yellow fever, atmospheric air is the usual medium through which the infection is received in the human system." That the poison gains its entrance chiefly through the respiratory passages is sustained by almost all the evidence which has accumulated to this day. Dr. Bemiss would very effectively impress this upon his classes by the following striking illustration, which I will quote, as it is pertinent to this occasion. The facts were furnished by Dr. Shannon of Ocean Springs, Miss., in a letter to Dr. Bemiss:

On the 14th of October, 1883, Major J. B. D. died of yellow fever at Ocean Springs. I moved the family at once to a healthy locality, where you saw Miss B., not allowing them to take any article from the room where the husband and father had died. The children applied to me for a lock of their father's hair, which I refused. But the older daughter, now dead, prevailed upon the nurse to give it to her. She placed it in an old envelope which had been torn open at the end, and carefully folded the torn end down, thus practically sealing it, and laid it away among other old letters. Sunday, the 4th of November, at 12.30 P.M., she brought this envelope out upon the gallery and opened it for the first time to examine the lock of hair and show it to her aunt, Miss S., who was visiting her, and upon inhaling the concentrated poison confined in the envelope and emanating from the hair, exclaimed: "Oh, what a peculiar smell." She then handed the envelope to her aunt, Miss S., who, un-

conscious of danger, also inhaled "the messenger of death" with a similar exclamation, when Mrs. B., who was standing near, reached out her hand for the envelope, but was prevented from getting it by the entreaties of a fretful child to be taken up in arms. This gave time for sufficient reflection, and she admonished the young ladies of the possible danger. The envelope was then carefully folded, and with its fatal contents replaced in the drawer where it had been since the 14th of October. This drawer had been almost daily opened. The following Saturday night, November 10th, at 9 P.M., Miss S. was taken sick with a chill, and Miss B. about 2 A.M., some five hours later, the period of incubation being less than seven days in both cases. No other person handled the fatal envelope or in any way came in contact with it, and there is, after the most careful inquiry, no suspicion of any other source of infection in these two cases. Miss S. died November 14th; Miss B. on November 16th.

This tragic event, that actually occurred in the very place which has been the starting point of our present troubles, may appear somewhat dramatic, but it is vouched for in every detail by Dr. Shannon, and Dr. Bemiss firmly believed in it.

The Essential Cause of Yellow Fever.—The profound impression produced by the epidemic of 1878 naturally led to many discussions as to the origin and cause of yellow fever, and the theories which were then entertained by many, even by some of the most competent in the profession, would now appear to us as being idle and absurd.

The "telluric" or "miasmatic," the "ship origin," the "fecal" and the "glandular" theories of yellow fever which are more or less dependent upon the supposition that the cause of the disease could originate spontaneously or *de novo* in certain places and in the human organism were still currently believed in, though never to the preponderating extent shown in the previous great epidemic of 1867.

That our sanitary authorities were most thoroughly convinced as early as 1878 of the microbic origin of yellow fever is most eloquently attested by the desperate but ineffectual efforts made by the President of the Board of Health, Dr. S. Choppin, to stamp out this disease by the profuse irrigation of the streets of this city with carbolic acid. The dominant theory was, therefore, the germ theory of the disease. All that was lacking was a tangible demonstration of the existence of the germ itself. It was not long before many anxious explorers began to see the coveted prize.

The first announcement of the discovery of a yellow-fever germ was made in 1878 by Dr. Joseph Richardson of Philadelphia. His alleged discovery was based upon the absolutely insufficient basis furnished by the *post-mortem* examination of a few specimens, and upon this slender foundation he labeled the new microbe the *bacillus sanguinis febris flavæ*.

Inspired by the disastrous experience of 1878 and

realizing the necessity of a systematic and careful study of yellow fever in its most prolific nursery—Havana—the United States National Board of Health determined to send a commission of experts to Cuba during the summer of 1879, and to this end selected Dr. Stanford E. Chaillé, chairman; Dr. Geo. M. Sternberg (bacteriologist), Dr. John Guiteras (pathologist and histologist), and the late Colonel Hardee of Louisiana, as sanitary engineer. It was my good fortune also to be selected while still an undergraduate and an interne of the Charity Hospital, to accompany the commission as its clerk and interpreter. I shall always remember the three months spent in Cuba in the company of these distinguished gentlemen and indefatigable workers as one of the most important events in my life, as experience and knowledge gathered in the hospitals of Havana, which were crowded with yellow-fever patients, and in the laboratory of the commission, were of immeasurable benefit to me in my subsequent experiences with this disease. It would be impossible and out of place on this occasion to give an account of the results obtained by the labors of the commission. Suffice it to say, that while the researches into the essential cause of the disease were only negative, owing in a great measure to the then rudimentary condition of bacteriologic methods, only the liquid-culture fluids being known and none of the various staining processes for studying bacteria in the tissues having been discovered, still, the indefatigable industry of Dr. Sternberg cleared many points in the histology of the blood which have been of the greatest value in his own subsequent work, as well as in that of other investigators. As to the study of the collateral questions, and especially the sanitary condition of Cuba, which determined the endemicity of the disease in that island, nothing more satisfactory, thorough, or complete has ever been given to the world than the data collated by the chairman, the distinguished dean of our medical department, Dr. Chaillé. I should mention incidentally that among one of the most notable results of this investigation was the fact, brought to light for the first time by Dr. Chaillé, that the immunity enjoyed by native Cubans, and in fact by all natives of endemic *foci* of yellow fever, was not due to the influence of climate, but solely the protection given by a previous attack experienced in early childhood. This explanation of native immunity, which was at first hotly contested in Cuba and elsewhere, is now definitely admitted everywhere, in consequence of the convincing evidence first furnished by Dr. Chaillé, and since by Dr. Guiteras while studying the same question in Key West and Matanzas.

Continuing with the record of the claims of discovery of the yellow-fever germ, we find that after

the negative researches of Woodward, Sternberg, and Schmidt, during 1879 and 1880, no discovery was definitely announced until 1881, when Charrin and Capitan believed that they had found a specific micrococcus in specimens of blood brought to Paris by Morand, from Senegal. During 1883, Dr. Lacerda of Rio de Janeiro, having discovered what he believed to be the specific micro-organisms in the liver and kidneys of yellow-fever patients, sent some material to Paris to Dr. Babes. For a time Babes believed that they were the veritable germs of yellow fever, but he subsequently renounced this claim. During 1884–85 Dr. Carmona y Valle of Mexico, in his memoir "*Leçons sur l'étiologie et la prophylaxie de la fièvre jaune*," described his *peronospora lutea*, a species of mucor, as the specific cause. During 1885, Domingos Freire of Rio de Janeiro, published his principal work, *La Doctrine Microbienne de la Fièvre Jaune*, in which he maintained the specificity of his *cryptococcus xanthogenicus*, and described his prophylactic inoculations and their results. This widely advertised announcement created considerable stir in the professional world, and prompted this government to detail Dr. Sternberg on a special mission of investigation.

The results of this notable inquiry are all embodied in the comprehensive and admirable report on the etiology and prevention of yellow fever published by the United States Marine Hospital Service during 1890, in which Dr. Sternberg completely refutes all the claims maintained by Freire and permanently disposes of the prophylactic value of his alleged vaccine.

The same fate awaited the claims in favor of the *micrococcus tetragenus febris flavæ* or *versatilis* (Sternberg) described by Carlos Finlay and Delgado of Havana, 1887–88, and in a similar manner, the bacillus which Dr. Paul Gibier found in the intestinal canal during 1887 while studying the disease in Havana. In the meantime Dr. Sternberg had been tireless in his investigations; he availed himself of every opportunity to fathom the cause of the disease. Starting with his first experience in Havana during 1879, he visited Rio and Vera Cruz in 1887, where he promptly eliminated the claims of Freire and Carmona; during 1888 he studied the disease again at Decatur, Ala., where the disease was epidemic; finally, during 1888–89 he again visited Havana and applied all the resources of the improved bacteriologic technic which he, above all others, could command. At the conclusion of his labors, which are all summarized in the complete report issued by the United States Marine Hospital Service in 1890, Dr. Sternberg was forced to the conclusion that the specific agent in yellow fever had not been demonstrated. Nevertheless, he emphasized the point that "among the facultative

anaerobics is one—my bacillus α —which has been isolated by the culture method in a considerable number of cases, and may have been present in all. This bacillus has not been encountered in the comparative experiments made. It is very pathogenic for rabbits when injected into the cavity of the abdomen. It is possible that this bacillus is concerned in the etiology of yellow fever, etc.” Here Dr. Sternberg rested. His laborious work had only succeeded in conclusively demonstrating that all the alleged discoveries previously made were fictitious, and the riddle of yellow fever remained as practically unsolved as ever. In this critical work, which swept away so many accumulations of bacteriologic rubbish, Sternberg’s conclusions were most ably confirmed and supported by the conscientious researches of Heineman of Vera Cruz, who, in a valuable paper contributed to *Virchow’s Archives*, 1888, also effectually disposed of the claims of Freire, Carmona, Gibier, and their followers.

It thus became evident that the germ of yellow fever was no common organism. If not imaginary, it certainly was endowed with the most elusive properties. It could surely be said of this microbe that the frequency with which it was seen was inversely proportionate to the skill and experience of the observer. There was reason for discouragement, but, nevertheless, it was evident in Sternberg’s interesting study of his bacillus that there was yet hope that with more time, opportunity, and improved methods the cunning culprit would at last be tracked and captured.

Such was the state of the professional mind when suddenly, after a silence of seven years, the bacteriologic horizon was illuminated by the almost simultaneous announcement of the discovery of the long-sought germ by Professor Guiseppe Sanarelli, the director of the Institute of Hygiene of Montevideo, Uruguay, and by Dr. W. Havelberg, a bacteriologist of Rio de Janeiro.

These announcements are regarded as of great importance, far in both instances they were made by men of acknowledged reputation and ability in the latest methods of bacteriologic research. According to the Roman correspondent of the *British Medical Journal* (February 23, 1897) Sanarelli is regarded as one of the most accomplished bacteriologists of the profession. “He is thirty-five years of age. His opportunities have been exceptionally fine. A graduate of Sienna, he continued his studies in experimental hygiene under Celli at Rome, Roux in Paris, and Behring in Berlin. In 1893 he received the appointment as Director of the Institute of Hygiene of Montevideo. During the summer of 1896 he went to the Island of Flores, where yellow fever was se-

verely prevalent. There he performed a number of necropsies, and was himself smitten with the disease. As soon as he recovered he resumed his investigations at Rio de Janeiro, where the disease was raging. Here at the end of two months of assiduous labor, his efforts were rewarded. For some time he was loath to give publicity to the fact that the specific microbe had been discovered. But at length he became so well convinced that he had in hand the yellow-fever microbe that he commenced in August the preparation of his serum-cultures. He encountered many obstacles, but these were finally overcome and he was able to state that “the microbe of yellow fever now splendidly presents itself, and is the strangest of all the microbes that are known.”

On the other hand, the fact that Dr. Havelberg’s report was first published in the *Annales de l’Institut Pasteur*, and that some of his work was done at the suggestion of M. Roux, would seem to indicate that he also has strong backing, and that we are likely to have a lively scientific tilt over the affair.

The most regrettable feature of the situation is that the respective microbes discovered by these men possess few, if any, traits in common, and are found in a different manner and in different parts of the body, so that there is in consequence decided antagonism between the respective claims.

According to Sanarelli the isolation of the specific microbe of yellow fever is only possible in fifty-eight per cent. of the cases, and in some rare cases may be effected during life. The reasons why in every case of yellow fever one cannot isolate the specific agent are easy to understand. In the first place, at the beginning of the disease the bacillus icteroides multiplies very little in the human organism, a small quantity of the toxin, as we shall see later, being quite sufficient to develop in man the very grave picture of the complete disease. In the second place, the toxin, either by itself or indirectly by means of the profound lesions which it determines, above all in the digestive mucosa and in the liver, facilitates in an exceptional way secondary infections of every kind. Such special infections may sometimes assume the type of true and special septicemias, with colon bacilli, streptococci, staphylococci, etc., capable of killing the patient by themselves alone. At other times they occur mixed, so that in the last stages of life they may transform the individual into a true culture of almost all the intestinal microbic species.

The bacillus at first sight presents nothing morphologically characteristic. It is a little bacillus with rounded extremities, for the most part united in pairs, in cultures, and in small groups in the tissues, from two- to four-thousandths of a millimeter in

length, and, as a rule, two or three times longer than broad. It is very polymorphous. A search for it in the tissues does not give good results, excepting in the cases in which the death of a patient occurs without secondary septicemia. Even in the cases which on bacteriologic examination give the purest results, it is not easy to see it in the section of the tissues, owing to the number being sometimes extremely small. Yet by employing suitable methods one can find it in the organs, usually united in little groups, *always situated in the small capillaries* of the liver, kidneys, stomach, etc. The best method for demonstrating not only its presence, but also the special tendency it has to be localized in small groups in the blood-capillaries, is to place a small fragment of liver, obtained from the body while fresh, in the incubator at 37° C. during twelve hours; this favors the multiplication of the specific microbes. Sanarelli's germ is stained readily by basic anilin dyes, but is decolorized by Gram's method. When stained by suitable media it is found to possess four to eight lateral cilia. It grows readily in all ordinary media above 20° C., the maximum temperature being 37° C. It does not liquefy gelatin, neither does it cause precipitation in meat broth, nor does it curdle milk. The most important diagnostic feature, however, is supplied by the colonies on the surface of agar when incubated for twelve hours at 37° C., and then allowed to develop further at room temperatures. The colonies, when incubated, appear merely as semitransparent round disks, but during subsequent growth at the room temperature a thick, opaque, white border forms around each colony, giving a very characteristic appearance, resembling a drop of sealing-wax. As their character fortunately may be determined within twenty-four hours, it serves to establish in the most rapid and certain manner the bacteriologic diagnosis of the fever. This statement is alone, if confirmed, of the greatest importance from a sanitary point of view. Taken with the possibility of obtaining a pathognomonic serum-reaction with typical cultures, just as is now done with Widal's test in typhoid fever, we at once grasp its full and enormous significance in dealing with the early and doubtful stages of yellow-fever epidemics. Should this test be available, we would not be compelled to wait for *post-mortems* to clear up a diagnosis, and the long hesitation and unseemly discussions which characterize medical consultations among official experts in non-typical cases would be promptly disposed of; neither would there be any likelihood of an entire country being infected while waiting for the percentage of mortality to decide as to whether the disease is yellow fever, dengue, or something else.

Causes of Death in Yellow Fever.—The patient suffering from yellow fever is in fact contemporaneously threatened by three imminent dangers, and the bacteriologic examination of the cadaver may approximately place the following in evidence as the principal causes of death:

1. It may be due to the specific infection, principally, when the bacillus *icteroides* is found in the cadaver in a certain quantity and in a relative state of purity. This happens only in the cases which run their special disease cycle to the end.
2. It may be due to septicemiæ successively established during the course of the disease, when the cadaver presents almost a pure culture of other microbes.
3. It may also be due in great part to renal insufficiency, when the cadaver is found almost sterile; the percentage of urea in the blood is very high, and death takes place before the malady has reached the end of the evolutionary cycle.

It is difficult to pronounce during the life of the patient on the prevalence or not of uremic symptoms over the specific, because the most salient symptoms of the yellow-fever intoxication are easily confounded with those of renal insufficiency.

The so-called "black vomit" is due to the action of the gastric acidity on the blood which is extravasated into the stomach in consequence of the grave toxic lesions of its mucosa. The act of vomiting is directly provoked by the specific emetic action which the toxic products of the bacillus circulating in the blood possess.

The hemorrhagic symptoms are due above all to the hemorrhage-producing (hemolytic) property possessed by the bacillus *icteroides* in common with other microbes, and, in the second place, to the profound and rapid fatty degeneration produced in the vessel walls.

The Specific Toxin.—The small numbers in which the bacillus *icteroides* are usually found in the human organism, and the violence of the symptoms which are immediately produced in dogs by injections of small cultures into the veins indicate the existence of a very active specific poison. This poison or toxin is obtained, like that of diphtheria, by simply filtering through porcelain the broth-cultures of the bacillus about twenty-four days old. The toxin bears heating to 70° C. (158° F.) almost with impunity, but boiling notably attenuates it. If cultures sterilized with ether are employed, the toxic power is much more active.

All the sympathetic phenomena, all the functional alterations, all the anatomic lesions which individualize and give the yellow-fever picture its wonderfully striking outlines are only the consequence of

an eminently steatogenic (or fat transforming), emetic, pyrogenic, hemolytic, and extraordinarily active toxin, elaborated by a germ which, for convenience, is called by its discoverer the *bacillus icteroides*. It is no doubt in consequence of these effects that yellow fever has been aptly compared to poisoning by the venom of certain serpents. Surely no one will deny, no matter what doubts he may entertain of the identity of Sanarelli's germ with the cause, if he has had any practical acquaintance with yellow fever, that no explanation has ever been offered more satisfactory to our pathologic and clinical sense, and that will better account for the train of symptoms which identify this disease—fever, vomiting, hemorrhages, albuminuria, anuria, fatty degenerations of liver, kidneys, and heart—than the effects of the toxin so clearly and impressively described by Sanarelli.

Now as to the mechanism of infection. By what avenue does this terrible germ enter into the organism, and where, or in what special tissues, does it establish its toxin factory? The first of these is a question of the greatest practical importance. We see that it produces its effects most rapidly when injected into the blood by intravenous or subcutaneous injection. But the normal or common way by which it gains entrance in epidemic conditions is not so clearly understood. It is evident that the *atrium* or gateway of infection must be by either of two ways—the respiratory or the alimentary passages. Sanarelli believes that it may be by both routes, but in accordance with clinical experiment and common observation, he lays stress upon the former route as by far the most frequent of the two.

The remarkable resistance to drying which Sanarelli has demonstrated in the *bacillus icteroides* warrants the assumption that this germ may be conveyed in the air as well as in water. Further, "contagion by the respiratory passages has been demonstrated to be possible by experiments on animals." As to the mechanism of contagion by water, milk, or other ingesta, it is difficult to understand it in healthy subjects, as it is now placed beyond a doubt that the epithelium of the digestive passages, when it is intact, does not, as a rule, permit the passage of any pathogenic germs. But in tropical countries the liver, especially of foreigners, is usually overtaxed, and it is possible to conceive that, owing to the weakness of this most important barrier against intestinal infection, the germ may gain an entrance into the circulation.

At any rate, the morbid process is clearly understood once the germ is admitted into the organism. Whether introduced by the nasal chambers, the fauces, tonsils, or lungs, or by the alimentary

tract, it is carried by the circulation to the capillary system of the liver, spleen, gastro-intestinal canal or kidneys, which are its preferred habitats. Here the germ develops slowly, for, like most potent microbes, its reproductive capacity is limited; in fact, five to eight days will be needed to form colonies which are so small that it will require the most skillful detective work with the microscope to discover them. While reproducing itself, however, it begins to manufacture its terrible toxin. This toxico-genetic function probably begins from the moment that the germ becomes fixed as a capillary embolus and when colonization begins. Its colonies are fully matured in the laboratory—outside of the tissues—in twelve to twenty-four hours. The dose and toxicity of the poison will no doubt depend upon the size and activity of the colonies. And here the vigor or weakness of the individual defenses of the host—phagocytic and humoral, will largely determine the future progress of the parasitic colony. The questions of the relative predisposition and immunity must largely decide whether the attack will be severe or mild. Certainly the effect of the first discharge of the poison into the blood stream is pyrogenic, then follows the emetic action probably on the nerve centers, then simultaneously begins the attack on the great bulwarks of defense—the liver, capillaries of the alimentary tract, the kidneys, and, lastly, the heart-muscle and the blood itself. Then the real danger begins—when these viscera and especially when the liver and kidneys are undergoing fatty change—then a gateway is at once opened for the admission of all the intestinal germs and their toxins into the blood, and by the destruction of the renal epithelium the great outlets by which they are to be carried out are plugged and auto-intoxication is inevitable. In the carnival of destruction which follows, the original parasitic host may itself be destroyed by the swarm of greedy guests that it has blindly admitted to its own banquet.

This account of the pathology of yellow fever may appear somewhat figurative and metaphoric, but it is, nevertheless, that which most clearly explains the phenomena of this remarkable disease.

We will now close by asking ourselves what is the practical outcome of all these researches—what bearing has Sanarelli's discovery to the prophylaxis, diagnosis, and treatment of yellow fever, if verified?

1. *Prophylaxis*.—It is legitimate to expect that in dealing with so specific and potent a micro-organism as the *bacillus icteroides*, it is possible, by attenuated culture or by an antitoxic serum, such as is now obtained from immunized horses after subjecting them to experimental diphtheria or tetanus, that

a reliable preventive and curative agent will be obtained.

2. *Diagnosis*.—That if the cultures obtained from the bacillus icteroides are specifically characteristic, as claimed by Sanarelli, a pathognomonic culture may be obtained in twenty-four hours from suspected cases. Again, if this should be impracticable during life, owing to the paucity of germs in the blood, it is possible that a specific serum reaction, similar to Widal's agglutination test, may be obtained, which will permit of an immediate and infallible diagnosis in the early stages of the disease. The enormous value of such a test to the sanitarian need only be mentioned to be appreciated.

3. *Treatment*.—Of course, the greatest value of Sanarelli's researches lies in the prospect of obtaining a specific antitoxin which alone can cope with the specific cause in the blood and the tissues. Apart from this, these researches would suggest some important conclusions which affect our present mode of treatment.

(a) That no hope of aborting or arresting the disease can be entertained by resorting to germicidal medication with the view of destroying the specific micro-organisms in the gastro-intestinal tract. When the symptoms of yellow fever present themselves, the specific germ and its toxins are already in the blood and tissues, and no amount of purgation or gastro-intestinal antiseptics could possibly affect its future course or development. This explains why all the emeto-cathartic remedies and antiseptic treatments have totally failed, either in the past or present, to control or abort the course of the disease.

(b) On the other hand, in view of the secondary infections, which so frequently complicate this disease by the invasion of the colon bacillus, staphylococci, streptococci, and other bacteria of the gastro-intestinal tract in the graver types of this infection, it is perfectly logical and proper to resort to laxatives and intestinal antiseptics and a total abstinence from all foods, with the view of diminishing these secondary intoxications to the minimum. In this way proper treatment may modify the course of the disease by diminishing the perils of its latest stages.

(c) At all times it should be borne in mind that, while attempting to secure the most complete asepsis of the gastro-intestinal tract, no violent drastics or germicidal agents should be resorted to, as the lesions of the mucosa produced by such agents would favor the very conditions which they are intended to prevent. For these reasons a mild triturate tablet of calomel and soda (aa gr. 1), followed by a saline draught, any of the purgative mineral waters, etc., given at the outset, will suffice. Then the most important means of maintaining gastro-intestinal asepsis

will be total fasting or abstinence from food until the latter stages, when fruit juices, hot or iced tea, champagne, and, lastly, peptonized milk, if the patient is convalescent, may be given with discretion.

One of the fundamental and pernicious errors in this disease is the belief that food is necessary in its treatment, because it is a prostrating disease. This is not a wasting disease, and when it is *typical* it is self-limited and of comparatively short duration. In this way it differs radically from typhoid. The cry of the organism is not for food, which will only help to clog up all the machinery of elimination, but for water, *water* which is needed from the very beginning, to dilute the toxins in the blood, to maintain the secretions of the poisoned organs, the skin, and, above all, to flush out the kidneys, which are blocked up so early in the struggle. Later on, when adynamic symptoms present themselves, stimulants may be given in moderation, and food of the most assimilable sort, and this only when convalescence has begun or secondary septicemias of long duration have set in. These are the cardinal principles which would guide my treatment in the present, and are essentially those that I have followed in the past. In no condition have I taken to heart more seriously the motto "*Primum non nocere*," and if my inexperienced junior friends will only remember this caution, even to the exclusion of all else I have said, I will feel that I have accomplished some good to-night.

THE TREATMENT OF YELLOW FEVER.¹

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THE treatment of yellow fever may be divided into (a) the hygienic, (b) the dietetic, (c) the therapeutic, and (d) the surgical. Pending the investigations being made by bacteriologists all over the world into the claims of the latest aspirant, Sanarelli, to the honor of having discovered the *vera causa* of yellow fever, the bacillus which has for ten years eluded Sternberg, which has successively baffled the brilliant Gibier, Carmona y Valle, Freire, and Finlay, and which he has named bacillus icteroides, we must fall back upon that line of treatment which, though possibly based upon false etiologic grounds, yet yields the best results, and, at all events, one which seems to meet plain and specific indications. Perhaps it would not be out of place to review briefly the line of treatment pursued here in the past. A brisk purgative; hot mustard foot-bath; patient covered with one or more blankets to promote profuse diaphoresis; hot orange-leaf tea *ad libitum*, and,

¹ Abstract of a paper read before the Orleans Parish Medical Society and published in *New Orleans Med and Surg. Jour.*, October, 1897.

at times, in the beginning an emetic; absolute interdiction of cold drinks, though cracked ice was allowed in small quantities for nausea. Spirits of nitre, or watermelon-seed tea, and some such diaphoretic as spirits of Mindererus, coupled with a four-days' fast, about completed the treatment up to the defervescence of the fever. Dry and wet cups and leeches were often used—the main reliance, however, was in sweating and starving the fever out. The results obtained by this method in simple and uncomplicated cases were most excellent, and were often better than those in which a more vigorous treatment was pursued.

The reasons for this success are not hard to find: (1) most patients with uncomplicated yellow fever tend to recover; (2) it usually did no harm, and (3) the great faith of the Creole nurses in its efficacy, by a species of hypnosis, gave much encouragement to the patient, thereby greatly facilitating his recovery. This treatment practically is the same as that pursued to-day by the Cuban peons, many of whom boldly assert that only those Cubans die who are treated by doctors. Thus it will be seen that this disease, if not over-treated, tends to recovery. The main indications being *Rest* in the horizontal position, a spare diet, perfect quiet, plenty of fresh air, gentle stimulation of all the emunctories, an abundance of cold water to quench the thirst, as well as to flush the kidneys, and the judicious administration of stimulants and easily digested liquid foods when the vital powers begin to fail. This will do in simple cases; but the difficulty lies in separating the complicated from the uncomplicated ones, as this disease, above all others, is very deceptive. Many cases which give every indication in the beginning of a happy termination end abruptly in death, and the converse; hence, we must resort to a method based upon more rational grounds if we would make any advance in the treatment of this affection, which seems to disorganize the blood *ab initio*. For a number of years it has been claimed by Sternberg, Joseph Jones, Bellver Mateo, Pedro Peñuelas, Alfredo García y García, and many other well-known students of this disease that it is a gastro-intestinal affection of microbic origin. Whether the bacillus or its toxins give rise to all the train of symptoms or not matters little, as the treatment, based upon this theory, must be one looking to ridding the intestinal tract of all offending substances, and of rendering it, by the use of antiseptics, unfit for the habitation of the bacillus. Acting upon this theory, Sternberg introduced to the profession his well-known bichlorid treatment; the Spanish surgeons stationed in Cuba—Mateo, Peñuelas and others—their naphtha and benzoate of soda treatment.

Dr. Alfredo Garcia of Santiago de Cuba, reasoning from the well-known fact that yellow fever does not occur in cold climates and that, when it does occur in the temperate zone, it tends to decrease with the fall of the temperature; yet, recognizing that its micro-organism can withstand 110° (centigrade) below zero, he conceived the brilliant idea of producing artificially in the tropics, by means of Cámara Polar, the frigid zone. This Cámara Polar is an ingeniously constructed building, somewhat on the order of our refrigerating storerooms, where the temperature can be rapidly cooled at will. Being a firm believer in the germ theory of the disease and of its well-known infectiousness, and having observed that its virulence was in proportion to the amount of infection present, and believing that each patient was subject to successive infections, during the five or six days of his illness, from the atmosphere around him, laden with the deadly germs contained in the gases thrown off by the skin, lungs, dejecta, and vomit in an atmosphere at a temperature suitable for their growth, he determined that as he could not transport his patients to a climate free from such surroundings, conditions, and temperature, he could at least transport the climate to his patients. He also claimed that the importance of these new infections has been demonstrated by the experiments of inoculation of Cheveaux Walson, Cheryne, and Bouchard, which go to prove that the number of microbes introduced into the organism influences the gravity and intensity of the disease. Garcia does not claim that the Cámara Polar exercises any specific action upon the microbe of yellow fever, but that the cold air of his chamber renders the micro-organisms and their products inert, as biology teaches that the microbe, like the cell, requires a suitable medium in which to live and fulfil its functions. By order of the Captain-General of Cuba a commission of learned medical men met in the military hospital of Havana on August 19, 1892, to discuss this new method. Dr. Garcia presented a list of 68 patients with yellow fever (after subtracting nine who suffered from intercurrent yellow fever) treated during September, 1890, at Santiago de Cuba, with a mortality of four, less than six per cent. Nine cases, all soldiers, were treated then, under the supervision of the commission in the military hospital in Havana, and two deaths occurred. The necropsies showed that one patient had ulceration of the pericardium, while the other suffered from mitral insufficiency together with adhesions of both pleuræ and congestion of the lungs which antedated the yellow fever and for which both soldiers had entered the hospital. The finding of the the commission was that neither of these fatalities was in any way due to the yellow fever or its treatment.

by the Cámara Polar. Now it is well known that the Spanish soldier is, at best, but a poor subject for yellow fever.

Pardon me for taking up so much of your time in describing this treatment, but I did not think any article on the treatment of this dreaded visitor from the Indies, now knocking at our doors, would be complete without mentioning a method yielding such results. For as private practitioners the plan is *not feasible*, yet, if upon further investigation it proves valuable, there is no reason why a hospital, devoted to the treatment of the fever by this method, should not be erected. For the present, we will have to content ourselves with a plan of treatment suitable to private practice.

Hygiene.—The hygienic treatment consists in having the surroundings scrupulously clean; vaults, kitchen-drains, and gutters should be rendered as aseptic as possible by using solutions of sulphate of iron and bichlorid of mercury. Remove unnecessary draperies from the patient's bedroom and let the ventilation be free. Sunlight, that great foe to dampness, molds, and various bacteriologic forms of life, is to be insisted upon when practicable. The microbe of yellow fever, like the thief in the night, seems to delight in stalking in dank, dark places. We know that the bacillus of many diseases seems to owe to molds its power of proliferation, if not life itself. Patients treated in tents prove the benefit of ventilation, sunlight, and freedom from mold. All alvine dejecta, vomited matters, and urine must be promptly removed, and some deodorizing disinfectant used. All forms of excitement, such as much talking, reading aloud, and *whispering* ought to be interdicted in the sick chamber. The attendants must answer questions only, and not lead in conversation. Visitors must be rigorously excluded, and even nervous members of the family when their presence excites the patient. Nothing but cheerful facts should be imparted. The prevalence of the disease, business matters, the death of friends and loved ones should not be discussed. Should it become necessary to call in a consultant the patient's suspicions must not be aroused as to the gravity of his illness.

Dietetics.—There exists a wide diversion of opinion on this subject for the first four or five days. Most of the older and many of the modern practitioners recommend an absolute fast of four days at the least. No less an authority than Dr. Segundo Bellver Mateo, Surgeon-Major in the Spanish army and chief of the body of the military sanitation of Cuba, states in his "Tratamiento Médico del Vómito Negro," published in *Transactions of Pan-American Medical Congress*, 1893, that an absolute fast of at

least five days must be insisted upon, asserting that the American cholera (typhus icteroides), like its Asiatic congener, must be destroyed by hunger and drowned in water (matalos de hambre y en agua a porgarlos). We cannot treat lightly the opinion of one whose table of mortality shows such brilliant results. He claims a death-rate of 1.5 per cent. in cases wherein treatment is commenced within twelve hours of the invasion of the attack; 3 per cent. in those of the second twelve hours of the first day; 13 per cent. in those of the second day; 30 per cent. in those of the third day, and 70 per cent. in those of the fourth and fifth day. Figures, if true, needing no comment, figures which show that the fate of the patient is dangerously compromised by delay—each twelve hours augmenting the danger. This point is further emphasized by the statistics of the Military Hospital of Havana, where the same relative results are obtained under a different plan of treatment. It will be seen from this the imperative necessity of promptness in beginning treatment, a necessity so great that to neglect it were criminal. Dr. H. D. Geddings, Past Assistant-Surgeon, United States Marine Hospital Service, advises milk and lime-water for the first few days, then light broth, with fat removed, and as the fever defervesces, soft-boiled eggs, milk-toast, bits of the white meat of chicken, and small portions of very tender broiled steak; the variety and the quantity of food to be cautiously increased for ten days at least before the patient's customary diet is allowed. Dr. C. Faget (*vide* Annual Report of U. S. M. H. S., 1894) recommends, from the beginning, milk in abundance, broth two or three times daily, and from two to six soft-boiled eggs a day. Dr. Alfredo Garcia does not advise any food before the third or fourth day, unless Jaccoud's tonic; brandy and gin can be classed in that category. These he administered sparingly during the first few days, as stimulants, not food. Dr. Viegas, a highly educated physician (four-years' study in the French capital), and a practitioner in Cuba for years and now a temporary resident of this city, assures me that he, together with many, if not all "practical" physicians in Cuba, prohibit all food the first few days, and after defervescence takes place its administration is cautiously begun and carefully limited as to quantity and digestibility. Our own distinguished colleague, Dr. Matas, pursues a similar plan.

I will not tire you by citing other authorities for this preliminary fast, varying from three to five days, *pro re nata*. In this connection we can all appreciate the aphorism of the great Sydenham, that "one-fourth of what we eat keeps us and we keep three-fourths at the peril of our lives." Let us look into

the *rationale* of this fast. First, yellow fever is *not* a wasting disease, hence needs no preparative treatment; second, the short duration of the fever precludes the necessity for sustenance; third, the action of the liver, kidneys, stomach, and intestines, together with their digestive apparatus, are so badly handicapped by the deadly micro-organism of this disease, or its toxalbumins, as to render the absorption of any food improbable, if not impossible; fourth, as the liver, by reason of its degeneration, is no longer able to filter the bile from the blood, and the kidneys, for the same reason, the urea—it holds good, founded on practical experience, that to add further material in the shape of food to the already surcharged blood-current were to add fuel to the flame.

When the patient's condition warrants it the physician, at his discretion, may select from the following diet-list: Sweet milk, buttermilk, Horlick's malted milk, whey, white of a raw egg in half-glass of ice water, soft-boiled and shirred eggs, Valentine's beef juice, broths, well skimmed and strained, of chicken, beef, or mutton; oyster stew (not the oysters), corn-meal gruel, and oaten porridge. That preparation so much in vogue during 1878, miscalled beef-tea, cannot be too severely condemned, as it is neither beef nor tea. Most of the beef extracts in the market are valueless and should never be ordered. The best extract of beef, by all odds, can readily be made by expressing the juice from a rare round steak, free from fat, by means of a cheap meat extractor obtainable at any hardware store. The juice thus obtained, rich in albuminoids and organic salts, after being properly seasoned, is readily digested and extremely palatable. It should be taken as soon as made—hot. Should stimulation be required, champagne (dry preferred), brandy, rum, gin, Ducro's Elixir, Panopepton, elixir coca erythroxyton, hypodermics of strychnin and trinitrin will be found of great value.

Neither fruits nor vegetables should be allowed until convalescence is well assured.

Therapeutics.—Granting that Sanarelli is correct in believing the germ of this fever to have its habitat in the blood itself, and not in the gastro-intestinal tract, the fact still remains that yellow fever must be classed and treated as a septic disease, and the intestines, reeking with fetid and at times putrid contents, as evidenced by the odor of the dejecta, must be swept out promptly, and kept swept out, to prevent auto-intoxication. Granting Sanarelli's claim true, and let its logical sequence—serum therapy—follow, we would still have to remove the results of these germs, just as we open an hepatic abscess to remove the pus caused by a streptococcus or a

staphylococcus, or the bacillus coli communis. All of our energies are bent on curing this septic fever by removing—not the *fons et origo*, the coccus—but the detritus, the pus, that slowly but surely is sapping the patient's vitality.

Intestinal antiseptics has been practically abandoned by even its most ardent admirers, for the average micrococcus seems better able to withstand germicides than his host. What an array of these germ-destroyers have been flaunted before the profession during the past ten years! and what claims have been made for them by our manufacturing pharmacists! Although we now recognize our utter inability to asepticize the intestinal tract, we can remove therefrom, by means of enemata, medicated or not, and purgation systematically employed, the great mass of septic matter.

Furthermore, we have reasons for believing that we may render the remaining contents of the intestines less actively poisonous by the use of such remedies as naphthols α and β , salol, benzoate of soda, bichlorid of mercury, peroxid of hydrogen, and so on to the end of the list. I have purposely left out the latest aspirant to public favor—formaldehyde—though its claims seem based upon good grounds. Believing this, the first indication in this disease would, logically, be the administration of a prompt and efficient purge, to be repeated if necessary; for, bear in mind that constipation, in this disease, is the rule. I deem it very important to state that I consider salines preferable to all others; and, furthermore, I place sulphate of soda at the head of the list, and this in doses of from 1 to 2 ounces in 6 ounces of water, *pro re nata*, to be repeated if vomited, for the following reasons: on account of its well-known action upon the liver; then it is the most active of the series, and last, though not least, it has stood the test of that hot-bed of yellow fever, Cuba, and is habitually employed by many of the eminent practitioners of that unhappy island.

Within two hours after the administration of the saline, I would put the patient, by preference, upon Sternberg's modified bichlorid treatment, which is:

℞	Natrii bicarbonatis		3 iv
	Hydrarg. bichlorid		gr. ss
	Aquæ dest.		O. ij.

M. Sig. One and a half ounces, every hour, ice cold.
—THE MEDICAL NEWS, vol. liv, June 15, 1889.

This treatment was used very successfully at Jacksonville, in the Garcini Hospital, Havana, and at Rio de Janeiro. In the first-named place, a mortality of 4.7 per cent. in 106 cases was obtained. The twelve patients so treated at Havana all recovered. Of the four in Rio one died.

Or I would order Beta Naphthol in $7\frac{1}{2}$ grain

doses every hour or two, according to the indications, to be supplemented by a drink to be taken *ad libitum*, composed as follows:

R	Natrii benzoate	3 ijss-ij
	Sacchari albi	3 ij-3 iv
	Aquæ dest. . . .	O. ij.

M. Sig. To be drunk freely, mixed with an equal quantity of seltzer water, ice cold.

This is practically Mateo's formula. Copious enemata of from one to three quarts of cold water, containing 2 ounces of sulphate of soda, should be administered each day, and high rectal irrigation by means of the tube is especially commended. The effect on the well-being of the patient and the temperature is often most marked. In spite of the well-known inhibitory effect of the anilin derivatives over the oxygen-carrying power of the blood and its ozonizing function, as well as their cardiac depressant effect, I would *yet* recommend, as do Drs. Geddings, C. Faget, and many others, their moderate use, the *first twelve* hours and no longer, under *any consideration*. Usually, one dose of acetanalid grains 5, or phenacetin grains 7 or 8, suffices to calm the excited patient and relieve his intense cephalalgia. The well-known analgesic properties of these drugs commend them. Never should more than three doses be administered to any patient. It is customary with some timorous practitioners to combine the citrate of caffein with these remedies to counteract their depressant action. This I believe to be based more upon theory than practice.

Of course, the use of pleasant effervescent purgatives, such as the solution of the citrate of magnesia, is not condemned, but, on the contrary, endorsed where the state of the stomach demands it. Castor oil, like hot drinks, is only mentioned to be condemned. With the olive-oil and lime-juice treatment I have no experience, but I would state that the Cubans esteem it very highly. Should nausea prove obstinate, all medication *per oram* and drinks should be discontinued, and a hypodermic of $\frac{1}{4}$ -grain of cocain hydrochlorate be given, or else $\frac{1}{6}$ -grain of morphia combined with atropia gr. $\frac{1}{10}$. Cracked ice is often an efficient remedy. Creosote, also, is of great repute here. Sinapisms and dry-cups to the epigastrium are also valuable, as I can personally attest.

It has seemed to me that a mixture composed of Liquor ammoniæ acetatis and acetic ether, in sweetened water, has had a most happy effect in many cases treated by me; but I fully realize that such treatment is purely symptomatic. Salicylate of soda is inferior to the benzoate in several particulars and superior to it in none, hence it cannot be recommended. For the reduction of hyperpyrexia I re-

gard nothing so good as cold water—baths, spongings, and enteroclysis. Patients should also be encouraged to drink cold water freely.

Dr. A. P. Merrill used, in 1820, during the epidemic at Bay St. Louis, nothing but cold shower-baths for reducing hyperpyrexia, the patient being well rubbed and covered up afterward. His treatment was calomel gr. xx, or oil, bleeding to faintness, and shower baths. Diet: Corn-meal gruel. Merrill claims to have treated 700 of Zachary Taylor's soldiers, with a mortality of seven. He claims equally favorable results elsewhere. Could it be possible that the results were due to his treatment or in spite of it? Personally, I believe judicious blood-letting in selected cases to be very valuable. I can never forget an accidental bleeding I gave a young girl, suffering from intense cerebral congestion and profoundly unconscious, the dreaded black vomit, harbinger of death, being hourly expected. I applied at midnight six large leeches, three on each side of the neck, swollen with its turgid vessels, directed the nurse to remove them when they had gorged themselves; went to bed and was aroused at 4 A.M. with the cheerful news that the girl was bleeding to death. The blood had saturated the mattress and run in a little stream on the floor to the fireplace, half-way across the room. I found my patient well-nigh exsanguinated, her face blanched, but her intellect clear, and she was practically convalescent. She made a good but slow recovery. Viewed from Sanarelli's standpoint, the loss of that amount of blood meant also the getting rid of just so many bacilli, and was scientifically, what it proved to be practically, good treatment. This subject will be briefly alluded to under the surgical caption.

The exhibition of the cinchona salts in yellow fever is believed to be productive of no good results, but of several untoward ones—notably, that of predisposing to hemorrhage, and of intensifying the nervousness. Unless malarial complications are *well* defined, these salts should never be given. I see no reason for Blair's celebrated initial treatment.

R	Calomel	gr. xx
	Quinin	gr. xxiv.
	At one dose.	

Very many remedies have been suggested for checking black vomit, which, being but the result of the hyperemic condition of the stomach, should not be treated as a cause, but as an effect. Dr. Faget places great reliance upon the tincture of the chlorid of iron; Dr. Llenas of Santo Domingo, upon the perchlorid; others upon ergot. These and all other remedies are but broken reeds to lean upon at this crisis of the disease.

Quite a number of patients recover after this symp-

tom develops under any or no treatment, but not on account of it. The most fatal of all symptoms, anuria, taxes the physician sorely, and many are the expedients resorted to for stimulating renal secretion, but, in the vast majority of cases, all prove useless in the hour of need. Gone is my faith in nitre, watermelon-seed tea, local applications of squills and digitalis in equal parts (quijano), and the much-vaunted pilocarpin—that remedy which was supposed to make the skin take on the vicarious action of the kidney. That pilocarpin sometimes does good, and oftentimes harm, I do not deny. Wet cups have seemed to be beneficial at times; but in this connection it may not be amiss to state that *cured* cases of anuria often turn out to be cases of retention. Patients do recover after the occurrence of this grave symptom—but not many. That most violent and painful of all counter-irritants, the moxa, holds out some faint hope in this direction. Turpentine in dram doses, now readily administered in Planten's hard or soft capsules, is often given in this country; whereas gin, practically possessing the same therapeutic effect upon the kidneys, is given the preference in Cuba. This remedy is worthy of trial.

Surgical Treatment.—Intravenous injections of normal saline solution; toxidiffusion; blood-letting; hypodermoclysis; cupping. Great results are obtained from the use of the first of these procedures. Dr. Mateo considers that he has wrested from the very jaws of death a number of patients suffering from anuria by this means. There is no question about the very great value of this saline solution injected into the veins, in just the very conditions so often found in yellow fever—septicemia, uremia, and lack of arterial tension. This solution should be sterilized and perfect asepsis enjoined in its use. When the vital powers are flagging great good may be expected from it. Two or three pints of sterilized normal saline solution thrown into the circulation often acts magically. Toxidiffusion is strictly in line with modern thought, as, by its use, a portion of blood charged with septic matter and laden with microbes is removed from the patient, and an aseptic, life-giving fluid substituted. This added fluid serves to attenuate the remaining blood and renders it less septic. Blood-letting is only useful at the commencement of the disease. It is then often very valuable. Dr. J. P. Davidson thought it of unquestioned value. Leeches are embraced under this head.

Hypodermoclysis is but another form of “drowning” the patient—that is to say, of introducing water into the system. It is reported as especially efficacious in oliguria and anuria.

Cupping, once so much in vogue, has, to use Mr. Cleveland's hackneyed expression, sunk into “innocuous desuetude,” a very undeserved fate, as both wet and dry cups are important adjuncts to our armamentarium.

THE SANITARY DISPOSITION OF GARBAGE.

By FRANK DONALDSON, M.D.,

OF NEW YORK;

MEMBER OF COMMISSIONER WARING'S SPECIAL STAFF.

No measure in the sanitation of a city is more fruitful of beneficial results than that embodied in the proper care of the streets and in the sanitary disposition of garbage. In a great city the removal of ashes, paper, and similar waste products is a comparatively simple matter, but the final disposition of garbage is not the least important and troublesome task of the Department of Street-Cleaning. In seaport towns it is customary to tow the mixed wastes to sea and dump them far from shore. This was the method employed in New York until about one year ago, and theoretically, with the strong tides which prevail in the vicinity of the entrance to the harbor, it should have been entirely satisfactory. Such, however, was not the case, the shores of Long Island being continually strewn with a mass of putrifying rubbish, a constant menace to public health. While this practice proved efficient as far as the city itself was concerned, it rendered seashore resorts comparatively uninhabitable during the summer months. Moreover, the absolute loss of whatever valuable products the garbage was capable of producing, when subjected to proper treatment, violated all laws of economy. These considerations led to the establishment of crematories or reduction-plants, not only for New York but for other cities, notably Philadelphia. Early attempts to get rid of garbage and at the same time to derive benefit from its destruction were defective, but the evolution of the process and final triumph was worked out by the authorities of New York City, and it furnishes an interesting and instructive lesson.

The first efforts in this direction resulted in the building of an ordinary furnace, a long brick affair with provision at the top for dumping in whole cartloads of rubbish, and an arrangement for maintaining a fire. Many noxious fumes were driven off by this process, and a second fire was maintained near the entrance to the chimney or smokestack, through which all the fumes passed and were largely decomposed and destroyed. Such furnaces simply destroyed the waste, and to that extent were satisfactory; but in order to extract products of commercial value from the garbage elaborate modifications were necessary. The process, as now conducted at Barren Island, will perhaps be best understood by

following the garbage in the various processes to which it is submitted. The garbage, separated from ashes, paper, tin-cans, and such waste material, is collected daily from each house in the city. The garbage-carts make their rounds on schedule time, and each householder sets out the garbage-can on the sidewalk, as nearly as possible, at the time the cart is expected. The scows promptly receive the contents of the carts at the dumping-stations. Thus, the average exposure of the garbage is eighteen to twenty-four hours, this time being necessary for loading a scow. Six hours are required to unload a scow, after which it is cleaned and disinfected before returning for another load. The average daily amount of garbage reduced during September was nearly six hundred tons, which is considerably less than the daily capacity of the reduction-plant. The receptacles are kept as clean as possible, their contents are dumped into carts and conveyed to scows moored at convenient dumping-places along the water-front, and these are towed by steam-tugs a distance of ten miles to the reduction-plant at Barren Island, on the southern shore of Long Island. Here the contents of the garbage-boats are carried by machinery up an inclined plane to the top of one of the buildings and dropped through chutes directly into perpendicular cooking-tanks, or digestors, about fifteen feet long and five feet in diameter. These number forty-eight, and are steam tight. The garbage is cooked by steam, which is forced through pipes opening into the bottom of the digestors. This process is continued five hours, at a temperature of about 300° F. This not only disintegrates, but completely sterilizes the contents of the tanks.

The cooking being completed, the mash is emptied into sheet-iron receiving-tanks, from which it is received into bags about thirty inches square. The filled bags then are placed in presses. The presses are sufficiently large to receive nine of these bags, one above the other, with appropriate slats between. Gradual pressure is applied, and the liquid as it is forced out runs into a tank, and the grease contained therein, as it rises to the top, is removed and placed in barrels for transportation. This grease is used largely for wheel lubrication, but some of it is refined and finds its way into other channels. The dark liquid remaining was formerly allowed to escape into the ocean, but it is now passed through a series of condensers, the final product being a substance rich in ammonia and phosphates. There remains a chemically pure and odorless water which is discharged into the bay. The solid material is then conveyed to the drying-house and placed in a masticating-machine, after which it is taken to the dryers, which are horizontal, steam-jacketed cylinders sixteen feet long, containing

revolving shafts with arms. This drying operation continues from three to five hours, and when the mass, which is called tankage, has been sufficiently reduced, it is conveyed to the storage-floor, where it is put into bags for use as fertilizers. This fertilizer-filler formerly came from the dryers as very fine powder, and had a distinct odor; but recent improvements have been made, and the filler now comes out in the form of coarse grains. In this the odor is less, and there is no possibility of its being carried by the wind.

The relation of such a factory to the health of the community in which it is located is naturally determined by the cleanliness of the building and machinery, the condition of the garbage-water, and the manner in which it is disposed of, and the character and amount of odor which escapes. The sanitary condition of the building and machinery is such that little more odor is noticeable than that naturally arising from a large kitchen. This is accomplished by preventing the escape of the unpleasant gases which result from the cooking process. These gases are drawn through condensers, and after being chemically washed, are discharged into the bay diluted with from 50 to 100 times their volume of salt water. The grease is conveyed through closed pipes and promptly barreled, and the dark foul-smelling liquid from which it is drawn off is in its turn condensed, and finally escapes as a chemically pure, limpid water. Moreover, it has been demonstrated by this plant that as a mercantile enterprise the results are most satisfactory.

In making these assertions regarding the absence of objections to the presence in a neighborhood of a reduction-plant, like the one described, the writer is cognizant of the fact that many complaints have been made about the odors which at times annoy the inhabitants of the shores of Long Island, and which have been, and still are, attributed to the reduction-plant. Undoubtedly, as the plant was originally set, much of the odor complained of came from the cooking garbage, but the method as conducted to-day is practically free from these charges. When we consider what a menace to public health putrifying garbage in the streets and alleyways of a large city and along the neighboring shores is, the great importance of its prompt collection and sanitary disposition can hardly be exaggerated. At the present time, the question of garbage disposition seems to be satisfactorily answered by the success of the Barren-Island plant.

It is a significant fact that during the past summer the death-rate in the city of New York has been less than at any time in its history. No one would affirm that the clean streets and prompt disposition of the

garbage has been the only factor in producing this result, but undoubtedly it claims its fair share of credit. The Commissioner of Street Cleaning, in a recent article, declares that the improved methods of disposing of garbage has contributed largely to the reduced death-rate. The average death-rate from 1882 to 1894 was 26.78 per thousand; during 1895, 23.10; during 1896, 21.52; and during the first half of the year 1897, 19.63. He further calls attention to the important fact that if the latter figure is maintained throughout the year, there will have been 15,000 fewer deaths than there would have been had the average death-rate of the thirteen previous years been maintained.

THE NEW YORK QUARANTINE STATION AND ITS WORK.

By A. H. DOTY, M.D.,
OF NEW YORK;
HEALTH-OFFICER OF THE PORT OF NEW YORK.

THE New York Quarantine Station is well equipped for the protection of this port against the entrance of infectious diseases. During the past two years active experimental work has been in progress at the laboratory connected with this department. The pathogenic organisms, the bacilli of the plague, cholera, anthrax, and diphtheria have been cultivated and studied. In conjunction with this the germicidal power of different disinfectants, particularly steam and formaldehyde, has been carefully investigated. The results obtained, which were very satisfactory, have already been published in the *American Journal of the Medical Sciences*, August, 1897, and the *New York Medical Journal*, October, 1897.

We are now dealing with facts, not with theories, and are able to perform disinfection in a prompt and scientific manner, with a certainty as to the result. Thorough disinfection is one of the great safeguards in preventing the extension of infectious diseases. Without it we are practically unable to deal with such an emergency. The failure to appreciate the importance of this has frequently been followed by disastrous consequences; therefore, every effort has been made at the New York Quarantine Station to prepare for the disinfection of vessels of all kinds. With the improvements which have been made during the past two years, including the construction of a disinfecting-steamer and laboratory, and the radical changes which have been made in the disinfecting outfit at Hoffman Island, I feel justified in saying that this station is the best equipped of all in the world. The means for disinfection consist of the steamer "James W. Wadsworth," which is about 115 feet in length and is fitted with a steam-chamber of the most improved and modern pattern, placed in the

stern of the vessel for disinfection with steam. A steel tank or chamber, having a space of 115 cubic feet and constructed for disinfection with formaldehyde gas, has been placed in the forward cabin. In addition, there is a furnace for the generation of sulphur dioxide, tanks for disinfecting solutions, etc. Bath and dressing-rooms are placed on each side of the boat, the ceilings, walls, and floors of which are supplied with enameled metal covering, in order that they may be properly cleaned and disinfected.

On the arrival of a vessel requiring disinfection, the "Wadsworth" steams alongside, and all persons, clothing, bedding, etc., which are to be disinfected are transferred to it. While this is in progress the ship, or that portion of it, presumably infected, is also submitted to a thorough disinfection. In this manner the work is promptly and thoroughly done, and commerce is interfered with as little as possible. This steamer can reach a vessel at any part of the bay or adjacent waters. The vessels usually disinfected by the "Wadsworth" are comparatively small, carry but few passengers, and come from Southern ports, in some of which infectious diseases usually exist. Occasionally, it is necessary to disinfect a steamer carrying a large number of steerage passengers. In such an instance, persons held for observation, with their baggage, and also the bedding belonging to the ship, are removed to Hoffman Island for treatment. The "Wadsworth" acts as a transport, and, after having removed the people to the island, returns to disinfect the ship.

About 2000 persons can be cared for on Hoffman Island. Bath-houses have been constructed which can accommodate one hundred bathers at one time. The large disinfecting-apartment on the island contains three double-jacketed rectangular steam-chambers, constructed of steel, each twenty feet long and about four by five feet in diameter. On the arrival of the persons above referred to, they are conducted to the bath-houses, where their clothing is removed, tied in bundles, tagged, and sent to the disinfecting-chamber. After the bath, woolen gowns are supplied. These are worn until the clothing is returned. These persons are detained until the expiration of the period of incubation.

The hospitals on Swinburne Island will accommodate about 200 patients, and although the buildings are old and not of modern construction, they are well supplied with beds, bedding, and apparatus for heating and lighting, and will answer the purpose until new pavilions are substituted. The State legislature has already appropriated money for the drawing of plans for the erection of new buildings both at Swinburne and Hoffman Island, and as these have been made and submitted to a committee it is ex-

pected that the necessary money for the buildings will be appropriated during the coming winter. Each of the islands is in charge of a superintendent, with a sufficient corps to keep the buildings and property in order and ready for immediate use. This duty is faithfully performed.

During 1896, 252,350 steerage passengers were examined at this station, and out of 12,127 vessels which arrived at the principal ports of the United States during the same year (1896), 6241, or more than one-half of the entire number, were inspected at the New York Quarantine Station. The work of 1897 will show about the same result. During this period, the plague, cholera, smallpox, yellow fever, and typhus have existed in numerous ports throughout the world, which have been in constant communication with New York, and although numerous cases of smallpox and yellow fever have reached this harbor no infection has passed the station. This fact will be appreciated when it is remembered that during certain portions of last year, also of this, from 200 to 300 cases of yellow fever, and an equal number of cases of smallpox, daily existed in the city of Havana. As this place is about three-and-one-half days' journey by water from New York, it is within the period of incubation of both diseases. In order that passengers arriving from Havana and other ports on the north side of Cuba, shall not be a menace to the health of this country, and at the same time that commerce should not be unnecessarily interfered with, it is required that all persons coming from Havana shall be supplied with a certificate to the effect that they have had yellow fever, or are natives of Cuba. In either case these persons are rarely subject to this disease and can be safely allowed to pass quarantine. Persons who do not present these certificates on their arrival are removed to Hoffman Island, there to remain until the difference in time between the period occupied by the passage and five days (the period of incubation of yellow fever) has elapsed. A number of persons thus held have developed yellow fever and have been transferred to the hospital at Swinburne Island. All vessels arriving from Cuban ports are subjected to disinfection. Their crews are not held for observation, as these persons are not allowed to leave the vessels, which are not docked but remain in the stream, where they are loaded and unloaded.

During the past summer yellow fever appeared at Panama and during a short period was quite active. A number of persons who reached Panama in transit to Colon, to embark on the Panama steamer bound for New York, became infected and the disease developed during the voyage; some died and were buried at sea and others were removed at this port.

This condition required careful inspection of all persons on board, the removal of some for observation, and thorough disinfection of the ship. As some types of malarial fever are very similar to yellow fever and are frequently found among the passengers and crew of these vessels, it will be appreciated that a differential diagnosis is not easily made; consequently it is the rule to remove suspicious cases until the diagnosis has been fully decided. I am glad to say that in no instance has a case of this disease reached New York. These results have been secured only after the greatest care and watchfulness on the part of the officers of this department and the carrying out of most thorough disinfection.

In order that authentic information may be procured from ports which are frequently infected, and with which New York is in more or less constant communication, representatives or correspondents have been appointed at some of the Mediterranean ports, Egypt, and South America. For a comparatively small sum these correspondents, who, as a rule, are physicians, keep this department supplied with a knowledge of the sanitary condition of these places. This is usually done by letter, although in some instances the cable is brought into use. Such information is usually more valuable than that which is obtained by the ordinary bill of health issued by a consul or consular agent.

With the arrangements above described I feel confident that the Health-officer's Department of the State of New York is prepared for any emergency which may occur at quarantine.

WATER PURIFICATION HYGIENICALLY CONSIDERED.

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(Continued from page 589.)

SKILFULLY constructed sand-beds, usually an acre more or less in area, are capable of purifying river and other surface waters very acceptably, provided there has been formed upon the surface of the fine, top sand layer a delicate and continuous film of confervoid vegetation, silt, and other fine particles which occur in such natural waters as require filtration. Since the first half of this century practical English working has demonstrated this very completely. This principle was introduced into Germany during 1856, but the true merit of the process and the essentials upon which its great hygienic value depends were not fully appreciated till more than a quarter of a century later. It was carried out in a very successful form at the Tegel river-lake supply of the Berlin water-works in November, 1883, to remove the trouble-

some, pipe-obstructing growths of *crenothrix* which resulted from the admission of deep well-waters. There the process has been studied most carefully since that time, and the thorough chemic and biologic results, noted by Proskauer and others, have furnished an invaluable guide to the understanding of the conditions which underlie success with such filters. So, too, have the corresponding investigations by the English Local Government Board and by the Massachusetts Board of Health, whose results are given in detail in their reports published during the last seven years.

It is found that, unlike sewage filters, the sand-beds employed to purify water for public supply do their important work chiefly by virtue of the upper layer of fine sand, and particularly by reason of the presence of an unbroken, fine film allowed to settle upon the surface of the sand before the filtering begins. In proportion to the perfect quality of this very fine straining medium is the efficiency of the filter as regards the separating of all (or practically all) bacteria from the water that passes slowly through the filter-bed. This removal of bacteria is the criterion of hygienic merit. As the flow through is at the slow rate of not much more than four inches an hour, considerable chemic purification of the water takes place during its downward passage through the masses of sand and gravel. On the immense area of sand and gravel surfaces bacterial slime (zoöglea), containing great multitudes of nitrifying bacteria, is attached. As the water, containing one per cent. of oxygen or more (if quite cold), flows slowly over these, the putrescible organic matters present are, to a varying extent, still further converted into inorganic compounds. This chemic change is due to the vital activity of the permanently adherent nitrifying bacteria whose presence, especially at the top, makes an old filter more efficient in this respect than a new one; yet, as Gill and Piefke first showed, simple washing does not cause sand to lose this zoöglea slime. Before the paramount importance of the separation of bacteria was recognized, greater stress than now was laid upon determining the degree of this chemic action. At the most, the chemic improvement is, as Frankland expresses it, "slight," and is not of much hygienic importance as compared with the bacterial efficiency of the film on the surface.

Suppose, then, a plant carefully constructed. It has a settling-basin large enough to hold several days' supply of crude water. Each filtering-basin is an acre or more in area; the firm walls and especially the bottom are water-tight by means of several inches of good concrete. There should be no ventilating pipes rising through the bed, and no projec-

tion or irregularity on the walls to restrict the facility of maintaining a continuous, smooth surface of sand. That of the upper portion of the bed is very fine, although it is not found best to have the grains less than one-fourth millimeter ($\frac{1}{16}$ of an inch) in diameter. Two feet or much more of fine, washed sand (although some have even less than a foot and yet work very satisfactorily, as at Alexandria, Egypt¹), are supported by coarse sand, and this by gravel and broken stone. This makes the filter about six feet deep. In some the sand rests on two courses of porous brick, and is reported to work well. The writer has not tested such thin filters. After filtering for from one to eight weeks, according to the condition of the crude water supplied, the sand surface will have collected so much slime and dirt that it is clogged, and water passes through only very slowly under any safe pressure. Then the inflow is stopped and water is drawn off through the outflow sufficiently to render the sand firm. Practised employees, having broad boards attached to the soles of their boots, go over the surface systematically, shoveling off the upper half inch or more of the fine soiled surface-sand together with the accumulated sediment above it. This is then removed to a neighboring washing arrangement. If this scraping has caused any disturbance of the even surface of the sand, this must be completely rectified, then all made smooth and perfectly level. At times more sand has to be added very carefully to replace that taken away by repeated scrapings. It is largely to obviate this that the sand-layer is made several feet thick at first, for the bacteria-separating efficiency may be equally good or nearly so if even less than a foot of fine sand be present, yet the brief increase in the number of bacteria, with the effluent which comes just after cleansing of the surface, is greater in shallow than in deep filters, probably because of mechanical disturbance of the bed in its deeper parts. The majority of experts think five-foot layers of sand yield better results than very thin beds.

After being cleaned and leveled, the filter-beds should have some of the purified water returned through the outflow pipe until the surface of the sand is just covered. Then crude water is gently introduced, through the regular supply-pipe, until the ordinary working height of three or four feet is reached. Care taken to accomplish this refilling without any disturbance of the sand surface is repaid by superior efficiency of the filter from the commencement of working, and by these means little or none of the first effluent may have to be wasted on account of containing too many bacteria. Before any water flows through, that carefully introduced should be al-

¹ *Ann. d. Hyg. Publ.*, 1895, p. 487

lowed to stand for twenty-four hours. At the end of that time the all-important film will usually have formed upon the sand surface. If the sediment be insufficient, some coagulant, such as alum or iron salts, may be added to produce this; yet the natural film, especially if of minute earthy particles, works best. When once the film is sufficient to separate bacteria properly, as determined by the usual gelatin-culture test of samples allowed to flow through, but not yet turned into the hydrant supply, the filter may begin to work. The impure water above the filter-bed is constantly maintained at the same level, not exceeding fifty inches, and the outflow is automatically regulated so that not much more than four inches flow through the sand each hour. That gives a yield of not more than from two to three million gallons per acre in twenty-four hours. This is the highest safe yield generally considered practicable. Yet in the Twenty-seventh Report of the Massachusetts State Board of Health (1895), pages 517 and 518, it is stated that upon experimental filters of very small size ($\frac{1}{20000}$ of an acre) filtration at the rate of from five to nine million gallons daily has been shown capable of removing more than ninety-nine per cent. of all bacteria! The unfiltered water contained several thousand bacteria, being from the Merrimac River, which at Lawrence contained considerably less than 30,000 bacteria per cubic centimeter, the average being over 16,000. The sand was five feet deep and 0.38 millimeter ($\frac{1}{1000}$ of an inch) was its "effective size," this term indicating the "maximum diameter in millimeters of the finer ten per cent. of the sand grains." (See Twenty-fourth and Twenty-sixth Reports, pp. 541 and 703, respectively.)

Intermittency in operation, while necessary, for sewage filtration, is both practically and theoretically less satisfactory than constant operation without cessation from one cleaning-time to another. This is especially so during winter. These filter-beds work continuously, then, when once the water is started running through them. The clearer the crude water, the longer the interval between cleanings. It is an advantage to employ settling-basins as large as practicable as a preliminary to the filtering process. They are indispensable when the supply is very turbid, such as are, notably, the waters of the Ohio and Missouri rivers. Gravity sand filter-beds, properly conducted and carefully managed, afford, on the whole, the most reliable artificial means of rendering an impure water fit for both domestic and general consumption. At their best they not only clarify the water, but also reduce the average number of bacteria to considerably less than one per cent. of the amount in the original crude water. At the same time, practically all disease bacteria are re-

moved, yet some filters yield very poor results, whether because of incompetent management or through inherent defects in the construction, or by forcing a sand-bed to produce beyond its capacity. When the surface is frozen the results are more apt to be defective.

(To be continued.)

MEDICAL PROGRESS.

The Direction in Which Cancer of the Breast Spreads.—

GEROTA (*Centralbl. f. Chir.*, Sept. 4, 1897) has made investigations to determine the course of secondary infection from cancer of the breast. He finds that the lymph-vessels are intimately associated with the branches of the internal mammary artery. This explains the occurrence of the infection of the retrosternal glands and the early adhesion of the pectoral muscles; and further, the occurrence of secondary nodules in these muscles. He also found that the glands of the thorax do not have independent sets of lymph-vessels but that these are in intimate relation with one another, which explains the spread of cancer from the right side to the left side, or the reverse.

Forty-six Cases of Placenta Previa.—PLATZER (*Centralbl. für Gynäkol.*, Aug. 14, 1897) presents a clinical report of forty-six cases of placenta previa. The results were as follows:

1. After expectant treatment, that is to say, by tampons or artificial rupture of the membranes (23 cases), the mortality of the mother was 0, that of the child, 39 per cent.; really, however, only 18 per cent., as two of the births were premature and in four cases the child was already mascerated.

2. After podalic version and spontaneous expulsion (8 cases) the mortality of the mother was 0, that of the child, excluding two mascerated fetuses, 83 per cent.

3. After version and immediate extraction (13 cases) the mortality of the mother was 23 per cent., that of the child 46 per cent.

From these statistics it appears that extraction is unfavorable for the mother and ought, therefore, to be rejected, even though it is somewhat more favorable for the child.

Paralysis of the Intestines after Abdominal Operations.—

ENGSTROM (*Centralbl. für Gynäkol.*, Sep. 11, 1897) says that paralysis of the intestines which follows laparotomy, sometimes producing death, does not always result from sepsis. He cites four cases in which death followed operation after fifty-seven hours, seven, eight, and ten days respectively. In these four cases there was not the least trace of peritonitis, which there would certainly have been if death had been due to sepsis after such an interval of time. Moreover, in one case the contents of the abdominal cavity were examined bacteriologically one hour after death and were found to be absolutely sterile. According to the author, a careful stimulation and nutrition of the patient, if necessary, per rectum, is a most important factor in preserving life.

The Advantages of Castration in the Defective.—FLOOD (*Jour. of the Amer. Med. Assoc.*, Oct. 23, 1897) presents conclusions upon the above subject drawn from observation of twenty-six cases. The boys were nearly all between seven and fifteen years of age. The first castrations were performed with the idea of preventing masturbation in certain cases in which the habit was most constant and the boy had no sense of shame, in addition to being a confirmed epileptic, and, of course, somewhat feeble-minded. The written consent of the parents or guardian was obtained. In every case masturbation ceased and the boy became fairer in complexion. A few also gained flesh. They became more manageable and more capable of reasoning and less inclined to quarrel. They ceased to give expression to lascivious thoughts and no longer enticed other boys to masturbate in their company. No melancholia has so far followed the operation. The mental effect was always good and in every instance the epileptic spasms became less frequent, though this improvement did not manifest itself until one or two years had elapsed. The effect upon girls was noted in only two cases, in both of which castration was performed before the patients were admitted to the institution. The results were favorable.

Influence of Castration upon the Mucous Membrane of the Uterus.—COHAN (*Centralbl. für Gynäkol.*, Aug. 14, 1897), by experiments upon rabbits, concludes that the immediate result of removal of both ovaries is atrophy of the uterus. The mucous membrane also decays, the changes being similar to those which occur at the climacteric though not identical with them. The causes of the changes in the genital organs which follow castration are unknown. The ligation of the tubes or of the spermatic arteries is of secondary importance in this connection.

The Constitutional Factor in the Causation of Hay Fever.—GRAYSON (*Ther. Gazette*, Oct. 15, 1897) mentions three factors which make up the etiologic combination of hay fever, *viz.*: an external irritant, some intranasal abnormality, and a constitutional element—"defective nutrition." The physician unaided cannot restore the nose to a state of health. In order to overcome the self-indulgence of the patient, regularity is recommended in eating, work, and play, while indiscretions of diet, lack of exercise, objectionable fancies in matters of clothing and bathing, and, finally, vicious excesses, alcoholic, narcotic, or sexual, will require the constant and most determined effort of the patient himself. The whole environment of the patient must be separately studied and provided for in the dietary scheme.

While it is true that if a man takes care of his muscles his nerves will take care of themselves, there is no closing of the eyes to the fact that to the average man exercise is distasteful; therefore, it is the more necessary to be explicit in instructions concerning it. Though there is nothing brilliant about this method of removing the constitutional factor of the disease, what it lacks in brilliancy is more than made up in certainty, and if the patient is possessed of grit and determination it brings a sure reward. It penetrates to and combats the very beginnings of the

pathogenesis, and with this fact in mind, we can scarcely be over-confident in anticipating and prognosticating success.

THERAPEUTIC NOTES.

Pulque, in the Treatment of Scurvy.—IDE (*Phila. Poly-clinic*, July 31, 1897) advocates the use of pulque, a Mexican drink, made from the juice of the *Agave Americana* (century-plant) in the treatment of scurvy and the scorbutic state. Pulque is an acid, unrectified wine, produced by fermentation, and contains in abundance the salts the lack of which is supposed to be the cause of scurvy. In an epidemic occurring in Puebla, Mexico, during 1892-3, 325 Mexican Indians were attacked, and were treated with large doses of pulque. The epidemic was quickly quelled, no new cases arising after the end of a week from the time the remedy was first administered to all the inhabitants.

Lactophenin in the Treatment of Typhoid.—F. GORDON MORRILL (*Archives of Pediatrics*, March, 1897) reports that lactophenin is used in the treatment of typhoid fever at the Boston Children's Hospital, and that 3- to 8-grain doses are very effective, and do no harm, producing a drop of 3.5° F. in the temperature within four hours, and inducing restful sleep.

The Ichthyol Group and Dermatitis.—KLOTZ (*Jour. of Cut. and Genito-Ur. Dis.*, October, 1897) writes of his experience during the last four years with strong solutions of ichthyol, thiol, and tumenol. Thiol has the same therapeutic advantages as ichthyol and costs about the same, but it lacks the well-known and rather disagreeable odor of the latter. One advantage which both possess that has not been mentioned by Unna, to whom their popular use is largely due, is the formation of a film upon the skin, if it is painted with the pure drugs, or a strong solution of the same, say fifty per cent. This film almost immediately forms, is not sticky, and affords an elastic covering which does not shrink, and is readily removed by water. Tumenol is not affected by water, and hence is of service in the neighborhood of the glans penis, etc. Over such a film an indifferent powder, such as the stearate of zinc, should be dusted. These preparations will rapidly relieve pain, burning, and itching in the various forms of dermatitis, including erysipelas, herpes zoster, acute eczema, and acute exacerbations of chronic eczema. Even on moist surfaces no pain worth mentioning follows their application. Unna reported a case of lichen urticarius, in which he painted the entire body of a six-year-old child with a fifty-per-cent. watery solution of ichthyol morning and evening. No doubt its use would be equally gratifying in variola, measles, and scarlatina. In chronic inflammatory conditions of the skin Klotz cauterizes the affected parts with liquor potassii diluted to suit the case. A swab of absorbent cotton soaked in this solution is thoroughly rubbed over the diseased area, which is then washed with water, and dried, and finally painted with ichthyol.

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THE YELLOW-FEVER EPIDEMIC.

AFTER an immunity from yellow fever extending over a period of ten years, the Gulf States have had a rude awakening from their fancied security by another invasion of the dread disease. Compared with previous epidemics the present one has not assumed alarmingly fatal characteristics, nor, thanks to the vigorous enforcement of sanitary and quarantine measures, has it included a very wide territory in its ravages. Still, the number of cases has not been inconsiderable (about 1800 to date) and the deaths have been sufficiently numerous (about 300) to sadden the entire community in which the epidemic prevails. Moreover, alarm among the people has been widespread, regular lines of traffic have been interrupted, and the suspension of business has caused a loss of millions of dollars.

The latest reports from the infected districts indicate fewer cases and more recoveries. Fortunately that natural sanitary agent, Jack Frost, has appeared upon the scene, the quarantine at various points is being raised, and the country is rejoicing in the conviction that the epidemic nears its end.

This incursion of yellow fever has awakened re-

newed interest on the part of bacteriologists, therapeutists, quarantine officials, and sanitarians throughout the country, not only in the etiology and treatment of this disease, but also in more efficacious quarantine measures. This issue of THE MEDICAL NEWS is largely devoted to these subjects, and cannot fail to be of unusual interest and profit at this time.

THE MARINE HOSPITAL SERVICE AS A NATIONAL GUARDIAN OF PUBLIC HEALTH.

THE time, perhaps, has not yet arrived for the management of endemic disease by other than local authority. In dealing with contagious and infectious diseases brought from other countries a national jurisdiction is imperative. Quarantine regulations affect foreign commerce; the detention, inspection, and disinfection of vessels and the management of crews, passengers, and merchandise concern the people and commercial interests of the whole country, and should be uniform and consequently national. For all practical purposes, therefore, the most important function of a guardian of public health is to administer a strict and impartial quarantine against alien diseases, such as plague, cholera, and yellow fever.

The recent terrorizing invasion of our country by the last-named exotic has aroused the people to the point of demanding more efficient protection from foreign and preventable disease. That a guardian of public health is needed no one will deny, but it is needed *at once*, and it must be capable and potent. The speedy creation and organization of a Department of Public Health fulfilling such conditions is impossible. Any effort in that direction would be an experiment, the ultimate results of which could be determined only after years of trial. Such experiments are uncertain except in the single item of expense. It is the duty, therefore, of every thinking, patriotic citizen to urge his Representative at Washington to hasten by legal enactment the endowment of the Marine Hospital Service with full Public-Health duties and powers.

Some captious critics have inveighed against the youth and inexperience of Marine Hospital surgeons. Let such know that the average age of the 16 surgeons is fifty years, of the 26 passed assistant surgeons, thirty-five years, and of the 19 assistant surgeons, twenty-nine years, and let them also remem-

ber that "a prudent youth is superior to a stupid old man."

Marine Hospital surgeons are well educated. Many of them have held and some still hold professorships in medical colleges, in spite of the fact that they are subject to change of station every four years or oftener. For admission to the grade of assistant surgeon they pass an examination, and must have an average of eighty per cent. in all branches. Successful candidates are relatively few. Of the 61 medical officers of the corps, 53 have had a previous hospital experience, 7 have been in private practice, and only 2 have had neither private practice nor hospital service.

There are no men more experienced in the theoretic and practical workings of quarantine than the members of the medical corps of the Marine Hospital Service. They make investigations into the cause, nature, life history, and prevention of epidemic diseases, and work in a laboratory fully equipped with the best modern appliances.

The discipline of the force is excellent. The surgeons assume posts of danger with alacrity, submit to great personal privation and exposure, and unflinchingly face a death which has come to several of their number in preventing and combating epidemic disease. Direct testimony as to the efficiency and capability of the Service has been demonstrated in the present epidemic of yellow fever. In many localities the authorities have asked to have a Marine Hospital surgeon detailed to their district to verify or disprove diagnoses, to direct quarantine matters, to organize detention-camps, and to render other assistance for which their experience and training especially fit them.

The Marine Hospital Service at present is supported by the authority of the Treasury Department and is advised by the Department of Justice. Belonging as it does to the Treasury Department, the Marine Hospital Service can decide and enforce any quarantine regulation properly and promptly.

With judicious additions to its ranks, with added authority and duties, and complete control of coast, border, and interstate quarantine, the Marine Hospital Service would give us what we have never had, a practical, scientific, and effectual quarantine, free from vexations, fees, devoid of unequal, oppressive exactions, and administered with military precision.

In the Marine Hospital Service, therefore, we have an organization ready for *immediate, capable, and potent* administration not only of quarantine affairs, but also of *all matters of Public Health*.

REDUCTION OF GARBAGE: ITS SANITARY IMPORT.

For a period of one week during the past summer the average death-rate per thousand in New York City was less than in any one week since the establishment of the Bureau of Vital Statistics. The weather from early spring until late in the autumn was characterized by sudden exacerbations of extreme temperatures, the thermometer registering over 90° F. several days in succession, to be followed by a period of equal duration in which the humidity was extreme; this in turn succeeded by a period of low temperature. The unusual death-rate, therefore, cannot be justly attributed to the salubrity of the climate; on the contrary, the weather was such as to favor prompt decomposition of animal and vegetable matter and the development of malignant germs. No little credit for the steady improvement in the health of the city must be attributed to the thorough work of the summer corps of inspectors which has been organized by the Board of Health. By means of the information furnished through this source, many cases of simple disease secured prompt medical attendance and all contagious and infectious diseases were immediately suppressed in consequence of the timely action of the health authorities. The marked improvement in the health of the people during the past summer points to some other active agent as the prominent factor in producing these salutary results. It is accepted by all authorities that this agent is none other than the clean streets and efficient method of disposing of the city's garbage and household waste which was inaugurated three years ago, and brought to its present high state of perfection during the recent summer months.

The prominent features of this system are: (1) careful separation of the garbage from ashes and other waste; (2) its prompt collection and transportation to the city's reduction-plant, a distance of about twenty miles, where it is submitted to a process which is fully described in this issue of THE MEDICAL NEWS.

The facility and care with which the streets have been cleaned and the waste collected and disposed of are facts to be noted. The efficient manner in which this is done has contributed largely to the sanitary condition of the city—the heedless methods which formerly characterized the disposition of garbage, the uncertain hour of its collection, the careless handling by which much of it became scattered about the streets, have been effectually corrected. The revolting appearance and noisome odors due to the endless rows of garbage-barrels, which in past years characterized the streets of New York, have disappeared, it is to be hoped, forever.

Not the least important feature of the present system is the economic element which enters into it. By carefully separating such articles as have a commercial value, such as rags, paper, bones, tin-cans, etc., and by extracting marketable products from the garbage at the reduction-plant, it is estimated that even in the city of New York where municipal business is credited with being conducted in the most extravagant manner, one-half of the expense of disposing of the waste products of the city is saved.

The enormous cost of keeping cities of even moderate size in a sanitary condition prevents the adoption of methods to that end; but if it can be satisfactorily demonstrated that fully one-half, and probably in smaller communities a still larger proportion, of the expenses can be extracted from the waste products, thorough methods of sanitation can be brought within the reach of every well-conducted municipality. The experience of New York should prove a most instructive object-lesson to the intelligent communities of this country, situated in more southerly latitudes where infectious and contagious diseases are more rife.

New York maintains a low mortality because its inhabitants are protected in two ways, *i.e.*, by careful and stringent quarantine, and by such sanitary measures as have been detailed. Mark Twain in a recent article describes Mauritius as “an island which depends for its health upon quarantine and not upon sanitation.” The decimating epidemics which periodically sweep over the island render it a by-word and a reproach; but where efficient quarantine and wise sanitation are combined, an intelligent community may laugh disease to scorn in any land and under any sky.

ECHOES AND NEWS.

Medical Students in Germany.—The various German universities enrolled 8232 medical students during the first six months of 1897.

New York Foundling Hospital.—Dr. Henry C. Coe has been appointed Consulting Gynecologist to the Hospital to succeed the late Dr. Lusk.

Bequests to Chicago Charities.—By the will of the late George M. Pullman, \$130,000 will be divided among thirteen charitable institutions of Chicago.

Tubercle Bacilli in a Cigar.—Dr. J. C. Spencer, bacteriologist of the Board of Health of San Francisco, Cal., reports that he discovered tubercle bacilli in a cigar made in China.

Intravenous Injections of Sea Water.—M. Quinton recently advocated, at a meeting of the Paris Biological Society, the use of sea-water instead of artificial serum for intravenous injections.

Dr. Joseph Collins Elected to Professorship.—Dr. Joseph Collins has been elected to the Professorship of Nervous Diseases in the New York Post-Graduate Medical School made vacant by the resignation of Dr. Charles L. Dana.

Abuse of Hospital Charity.—In a recent issue, *The Lancet* comments upon the fact that a pugilist who had defeated his antagonist and won a purse of \$3000 went to a charitable institution to be treated for a broken arm received in the fight.

Death of a Centenarian Doctor.—The death is announced of Dr. William B. Sprague at Cold Water, Michigan. He was born more than a hundred years ago at Malta, Saratoga County, N. Y., and practised medicine until he was ninety years old.

King of Sweden's Donation to Tuberculosis Sanatoria.—On the twenty-fifth anniversary of his accession to the throne, the King of Sweden donated a sum of 2,200,000 kroners to be applied toward limiting tuberculosis by the erection of sanatoria and other means.

Smallpox at Montreal.—Smallpox has again appeared at Montreal, in the person of a young girl who had been attending a school kept by the nuns of the Congregation of St. Catherine, and which has about 500 resident pupils. As a result the school has been quarantined.

Delegate to International Congress of Hygiene.—Major Alfred C. Girard, surgeon, U. S. A., is detailed as a delegate to represent the Government of the United States at the Ninth International Congress of Hygiene and Demography, to be held at Madrid, Spain, April 10 to 17, 1898.

Another Typhoid Epidemic in an English Town.—Typhoid is prevalent at King's Lynn, England, more than two hundred cases having been reported. The cause of the outbreak is attributed by the sanitary authorities to pollu-

tion of the water-supply by surface water after a thunder-storm.

Consolidation Officially Postponed.—The Regents of the University of the State of New York, in accordance with the request of Bellevue Hospital Medical College and the New York University, have reconsidered the ordinance of April 8th providing for the consolidation of the two medical colleges; the matter of the proposed consolidation was laid on the table.

Mismanagement of Sanitary Service in the French Army.—Typhoid fever has recently appeared in many of the garrison towns in France, and its origin has been traced to a faulty water-supply. This has led to complaints of mismanagement of the sanitary department of the army. It is also said that the Commissariat Department has permitted the purchase of meat unfit for food.

Michel Angelo's Collection of Prescriptions.—There has been found in the Vatican Library a collection of prescriptions and directions for treating various eye diseases in the handwriting of Michel Angelo. These were probably obtained from medical friends for his own use, for the great sculptor suffered from an eye trouble which nearly made him blind before he died.

No Football in Georgia.—On account of the fatal injuries received during a game by a member of the University of Georgia football team, a bill was recently passed in the House of Representatives prohibiting football in all universities and other institutions in Georgia which receive aid from the State. A similar bill was also introduced in the Senate.

Notification Fees.—In Huddersfield, Eng., the notification of cases of infectious disease is enforced under a law which provides that a medical practitioner shall be paid the fee of 1 shilling for each certificate. He need not notify, however, and will not be paid any fee in regard to other cases of the same disease occurring in the same house during the thirty days following the date of the first certificate.

Typhoid Fever and Certain Games.—An English practitioner, in writing to *The Lancet*, refers to the fact that many cases of typhoid fever occur in the autumn, and attributes the cause of the disease to games, such as marbles and peg-top, which are played in the street during this time of the year after the cricket season is over. In playing marbles a boy frequently licks his fingers to prevent the marble slipping, and the whip-cord of a top is wet in the mouth for the same reason. In this way germs are conveyed into the alimentary tract. The writer's theory is borne out by the fact that the disease almost exclusively affects boys.

Obituary.—The death from pneumonia of Dr. Joseph E. Culver, of Jersey City, N. J., is announced. He was born in Groton, Conn., in 1823. He studied medicine at Pittsfield, Mass., and also at the College of Physicians and Surgeons, New York, where he graduated in 1849. He was a charter member of the New Jersey Medical

Academy, a member of the New York Pathological and Neurological Societies, and one of the staff of St. Francis' Hospital, Jersey City.—Dr. Charles H. Avery, Secretary of the New York County Medical Society, died of diabetes on the 2d inst., at his home in New York City, in the sixty-third year of his age. He was born in Perryville, Madison County, N. Y. He was a graduate of the Long Island College Hospital, and for more than thirty years practised medicine in New York.

Health Reports.—The following statistics, concerning smallpox, yellow fever, cholera, and plague, have been received in the office of the Supervising Surgeon-General of the United States Marine Hospital Service, during the week ended November 6, 1897:

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Mobile, Ala.	October 30–November 5	74	5
Montgomery, "	October 30–November 3	25	3
Selma, "	October 30–November 4	1	1
Wagar, "	To November 3	45	3
Whistler, "	To November 1	25	2
Baton Rouge, La.	October 22–31	3	1
New Orleans, "	October 30–November 5	266	54
Bay St. Louis, Miss.	October 29–November 5	42	2
Cayuga, "	November 5	1	..
Clinton, "	October 31	2	..
County Farm, "	November 5	1	..
Durant, "	November 1	1	1
Edwards, "	October 30–November 4	4	..
McHenry, "	November 2	1	..
Nitta Yuma, "	October 30–November 4	9	..
Pascagoula, "	October 30–November 3	6	..
Scranton, "	October 30–November 4	35	3
West Pascagoula, "	November 2 and 3	8	..
Memphis, Tenn.	October 30–November 5	19	10

YELLOW FEVER—FOREIGN.

Rio de Janeiro, Brazil	September 25–October 2	1	..
Cardenas, Cuba	October 16–23	0	2
Cienfuegos, "	October 17–24	0	1
Havana, "	October 21–28	0	14
Manzanillo, "	October 15–22	0	3
Sagua la Grande, "	October 9–23	102	3
Santiago de Cuba, "	October 9–23	0	15
Kingston, Jamaica	October 9–16	1	..
Manchester, "	October 9–16	1	1
Portland, "	October 9–16	1	..
Port Royal, "	October 9–16	3	2
St. Andrew, "	October 9–16	1	..

SMALLPOX—UNITED STATES.

New Orleans, La.	October 16–23	1	..
Bay City, Mich.	October 23	3	..

SMALLPOX—FOREIGN.

Rio de Janeiro, Brazil	September 25–October 2	19	..
Santos, "	September 18–25	1	..
Sagua la Grande, Cuba	October 9–23	67	4
Gibraltar	October 10–17	1	..
Moscow, Russia	October 2–9	1	1
Odessa, "	October 9–16	1	1
St. Petersburg, "	October 9–16	6	..
Warsaw, "	October 9–16	..	9
Madrid, Spain	October 12–19	0	2

CHOLERA—FOREIGN.

Bombay, India	September 28–October 5	..	32
Madras, "	September 25–October 1	..	3

PLAGUE—FOREIGN.

Bombay, India	September 28–October 5	..	44
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Yellow-Fever Notes.—On the night of November 2d there was a slight frost at New Orleans and throughout the State of Louisiana. On the 4th inst. the Board of Health of Louisiana issued an order raising quarantine against all points. Passengers from Montgomery, Mobile, and coast points, coming to New Orleans are obliged to have certificates from health-officers to the effect that for ten days previous to their departure there had been no yellow fever in the houses in which they were residing. All baggage and household effects from the points mentioned will be disinfected at the Rigolets Station under the supervision of the quarantine officers.

No new cases were reported in Montgomery, and quarantine against all points has been raised and travel and trade are no longer restricted.

On the 5th inst. twenty-five new cases and ten deaths were reported in New Orleans. No new cases occurred at Montgomery, Ala., and none at Selma, Ala.; one new case and one death were reported in Highland Park, Ala. Eleven new cases and two deaths occurred at Mobile, Ala. Two new cases were reported at Cayuga, Miss.

On the 6th inst. the record in New Orleans was twenty-one new cases and five deaths; many recoveries were reported. Five new cases and one death were reported in Mobile, Ala., and quarantine has been raised at that place. One new case occurred at Memphis, Tenn., and three new cases at Montgomery, Ala.

Twelve new cases and eight deaths were reported in New Orleans on 7th inst. The general feeling is that the epidemic is practically over. Up to date the cases are as follows: Total number, 1743; deaths, 236; recovered, 940; still under treatment, 566. One death occurred at Montgomery, but no new cases. Four new cases were reported at Mobile, Ala., and one death at Memphis, Tenn. The opinion is expressed by health-officers that the open-air development of the disease is at an end and that it will soon die out.

CORRESPONDENCE.

THE FOURTH DIVISION EXPLAINS.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: The Fourth Division of Bellevue Hospital declines to enter upon a personal controversy as to its action in making such nominations as it has deemed most conducive to the interests of the institution. In the exercise of its properly delegated authority and in its discretion, it recently nominated to the Commissioners of Charities a gentleman to fill an existing vacancy upon the division. This nomination was rejected, and the nominating privilege abrogated in order that a purely political appointment might be made. The division had been unpledged to any candidate, either as a unit or by the action of its individual members. The names of three candidates were presented for its consideration; two were those of gentlemen exceptionally well qualified in every way and representative members of the medical profession, and it was no disparagement to either that only one could be chosen. The third name was that of a very persistent

gentleman, then holding a subordinate position, whose appointment, it was thought, would be in every way less to the interests of the hospital. The correctness of that opinion may be estimated from the nature of the public communication which we are compelled to notice.

As this response to an editorial suggestion will end, so far as we are concerned, the discussion of an unpleasant matter, and lest silence should be construed as a recognition of the truth of various gross misstatements, it may be said briefly: (1) That the former assistant physician who makes complaint was appointed in 1896 at the request of a political friend, and was reappointed in 1897 at his own urgent solicitation. (2) That no member of the division has ever stated that the name of any applicant for appointment would be refused consideration. (3) That the Commissioners of Charities in returning the nomination did not assign the reasons for rejection and did not ask that additional names should be submitted.

(It may be added that the complainant himself was insistent that more than one nomination should be made, and his own name included, as he at the same time declared that in such case he would be appointed whoever else might be nominated. To have acceded to his demand would have been tantamount to the withdrawal of the nomination already made. His reiterated assertion that he would be appointed whether nominated or not, proved to be true.)

(4) That the Fourth Division submitted no plan for the reorganization of the hospital.

(5) That the intimation that the Fourth Division has refused consideration to any applicant for appointment on the ground of his financial disability, lack of social position, or the fact that his practice was among the poor, is utterly unfounded and unwarranted.

Finally, we are unable to perceive that the appointment of the gentleman nominated would have been in any way an affront to the general profession which we represent in the service of Bellevue Hospital, or to believe that it would have been less acceptable than the one which has been made without our approval.

Adopted at a special meeting of the Division.

W. F. FLUHRER, M.D.,
Secretary.

NEW YORK, November 10, 1897.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

ORIGIN OF HEPATIC CIRRHOSIS—DANGERS OF OPERATIONS UPON THE THYROID IN EXOPHTHALMIC GOITER—IMMEDIATE LAPAROTOMY IN GUNSHOT WOUND OF THE ABDOMEN—INTESTINAL PARASITES AMONG CHINESE AND EUROPEANS IN PEKIN.

AT the session of the Academy of Medicine, held September 7th, LANCEREAUX spoke of *hepatic cirrhosis in alcoholic subjects*. An experience of many years has convinced him that cirrhosis is caused by wine drinking rather than the drinking of strong liquors. Granting the truth of this statement it is necessary to seek for some substance other than alcohol as a cause of the cirrhosis. Lanceriaux believes that he has found such a

substance in the bisulphate of potassium, which exists in considerable quantities in some wines. Guinea-pigs, rabbits, and dogs, which receive daily from 2 to 7 grams (30 to 100 grains) of bisulphate of potassium die in from six to eighteen months with all the symptoms of hepatic cirrhosis. When one considers the exact location of alcoholic cirrhosis it is seen to be situated chiefly in the perilobular branches of the portal veins; and it is rational to believe that the potassium salts introduced into the blood exercise a direct action upon these vessels and the adjacent connective tissue. The sale of wines containing large quantities of bisulphate of potassium (4 to 6 grams per liter in some instances) ought to be prohibited by law.

At the session of September 14th, PONCET spoke of the *dangers of thyroidectomy in exophthalmic goiter*. It is not so much the operation that is dangerous as is the removal of the thyroid gland. Those surgeons who have operated extensively have had cause to regret a number of deaths probably produced by one of two causes: (1) An acute intoxication by the products of an altered gland suddenly discharged in large quantities into the circulation; or (2) grave disturbances in the cardiac and arterial mechanism due to irritation of the sympathetic nervous system. At any rate thyroidectomy in this variety of goiter has an immediate mortality of from fifteen to thirty per cent. The patients die after well-marked symptoms, consisting of a sharp rise of temperature, a pulse of from 180 to 200 per minute, agitation, anxiety, profuse sweating, and finally collapse in from one to three days subsequent to the operation. Because of its dangers the operative treatment of exophthalmic goiter ought to be abandoned, or be confined to resection of the sympathetic in cases in which the tumor is not very large. If it is so large as to threaten suffocation an attempt may be made to relieve the pressure upon the trachea by long incisions over the hypertrophied thyroid gland.

At the session of September 21st, CHAUVEL mentioned an instance in which *immediate laparotomy was performed for gunshot wound of the abdomen*. He advocated in all cases of abdominal wound, whether made with ball or blank cartridges, an immediate laparotomy, and search for, and repair if possible, of injuries of the intestines without waiting for the development of symptoms (a practice which has been followed in America for a good many years).

The *value of a pure water-supply* is clearly shown by a report made by MATIGNON on the relative frequency of intestinal parasites among the Chinese and Europeans in Peking. Among Europeans who, as a rule, use boiled water, ascariides occur in only about one-fourth of the population, a percentage which is far below the occurrence of the same parasite among the Chinese who use water of a poor quality. On the contrary tenia is more common among the Europeans than among the Chinese, due apparently to the fact that the former eat much more beef than the latter.

MOTY read a paper in which he attempted to prove that most *accidents connected with wisdom teeth* are due to the proliferation and inflammation of the epithelial

processes included between the roots of these teeth. The pus of the abscesses thus caused is originally aseptic, but the difficulty it has in reaching the surface causes the inflammation to spread into the dental canals and into the neighboring bony tissue. To this extension is due the gravity of the affection.

Moscow.

At the Twelfth International Congress recently held at Moscow, CZERNY read a paper upon *Therapy of Carcinomatous Stricture of the Esophagus, Pylorus, and Rectum*. In the first of these three situations, one has little to hope from a radical operation. The cancer is only exceptionally situated so high up that an esophagotomy is possible below it. Dilatation by means of esophageal bougies is only allowable in dense growths, as it has a tendency to hasten the destructive processes in soft or ulcerating cancers. The operation to be considered is, therefore, a gastrostomy. Of those methods which have been advocated, one of the latest by Marwedel, is the most satisfactory. Its essential principle is to open the stomach wall as well as the abdominal wall by means of an oblique incision. Using a catgut suture the stomach is fastened to the abdominal parietes, and then opened, and a tube obliquely stitched into its wall. These sutures loosen in five to eight days sufficiently to permit removal of the tube, and feeding is then continued by means of a catheter, while the fistula is readily kept closed between meals by the use of a gauze pad. If the canal shows any tendency to contract it may be dilated with tubes, gradually increasing in size, until the required dilatation is affected. Czerny has performed the operation fourteen times, losing only three patients, one from inanition within the first day, one from pneumonia within five days, and one from ulceration of the carcinoma into the trachea, eighteen days after operation. All the others rapidly gained in weight.

With the development of gastro-enterostomy, resection of the pylorus for cancer has become more infrequent. From 1881 to 1893 Czerny performed the former 20 times and the latter 18 times; since 1893 he has resected the pylorus 10 times, and performed 70 gastro-enterostomies. As the results after the simpler operation are so good, as far as improvement in general condition is concerned, it is unwarrantable to subject the patient to the greater risk of removal of the pylorus unless, as is too rarely the case, it is freely movable. If a radical operation is still a possibility, it of course makes a more favorable prognosis possible; but if the surgeon waits to have the diagnosis established by a well-marked tumor, cachexia, absence of hydrochloric acid, or metastasis, then it is almost surely too late. The best operation is that of V. Hacker, the anastomosis being made between the posterior wall of the stomach and the jejunum. With the aid of Murphy's button and good assistants, this operation may be performed in uncomplicated cases within fifteen minutes. If the stomach is so infiltrated that the posterior wall is inaccessible, the anastomosis may be made with the anterior wall (Wölfler's method). Naturally these are the worst cases, and it is not surprising to find that the mortality from this method

is forty-six per cent., as against a mortality of seventeen per cent. from the method of V. Hacker. In three cases the clinical diagnosis of carcinoma was apparently complete. Nevertheless, they all gained rapidly after the gastro-enterostomy, and ultimately recovered. Czerny is, therefore, in doubt whether the diagnosis was faulty, or whether these were instances of spontaneous disappearance of a malignant growth. Unfortunately no section for microscopic examination was made in any one of these cases. Resection of the pylorus was performed 22 times for cancer, 9 of these patients dying within the first month, 2 of them are still living after thirty-seven and seventy-eight months respectively, with no sign of recurrence.

The permanent results in cancer of the rectum are far more satisfactory than those obtained in cancer of the upper portions of the alimentary canal. Thus, of 109 radical operations, 10 died from the operation; 12 lived or are living less than two years without recurrence; 21, over two years; 15, over three years; 13, over four years; and 8, over five years. When such results as these are possible after a radical operation, palliative measures are not to be considered in suitable cases. It is the duty of surgeons to so improve the technic of the operation as to still further reduce the mortality and the probability of recurrence after operation; and it is the duty of physicians by careful local examination to establish an early diagnosis, and to persuade the patients to submit to early and radical treatment.

In 21 instances the rectum was curetted. As this procedure was twice the cause of perforative peritonitis, and at best had only a temporary good effect, Czerny has abandoned it for colostomy, which he has performed 45 times, with a mortality of seven per cent. Linear rectotomy, which is fitted only for scirrhus cases, and like curetting gives relief merely for a few weeks, has also been abandoned for colostomy. The mortality of the resections of the rectum by the sacral (Kraske) method is 13.64 per cent.; while that of the perineal method is only 3.6 per cent. But this is again an unfair comparison, as the simpler cases alone were attacked by the perineal route. Enough time has not yet elapsed to say which method gives the best ultimate results, though it seems probable that the sacral operation, by affording a clearer field, enables the operator to more surely remove all affected tissue.

The retention of feces after operation depends upon the seat of the new growth. It is a safe rule to cut through healthy tissue at least one inch from the tumor. If this is done, and the whole or part of the sphincter remains incontinence is usually avoided. Even if the sphincter is wholly removed, the use of a rectal irrigation once or twice daily, will in many cases prevent incontinence. Gersuny's plan of twisting the bowel to prevent incontinence has not been found practical.

Czerny said he prefers the parasacral incision. He divides the sacrum below the third foramen, as paralysis is likely to follow a higher section, reflects the bone flap, separates the bowel, ligates and divides it above and below the neoplasm, removes the tumor, secures all bleeding points, and sutures the cut ends of the bowel at least

partially before the elastic ligature is removed from the upper end. The pararectal wound is washed out with a 1-3000 bichlorid solution, and then with salt solution. A large rubber tube covered with iodoform gauze is introduced into the bowel to provide for the escape of feces. Czerny prefers the osteoplastic method as giving a support to the bowel. He sutures the wound very lightly or leaves it open altogether.

Of the palliative operations, only colotomy was spoken of. The relief which follows in cases in which the bowels are evacuated with difficulty inclines one much to this operation in hopeless cases, even though it gives but temporary amelioration of the symptoms. If the carcinoma causes diarrhea and pain the relief after colostomy is less striking, although authors have mentioned instances in which the withdrawal of the irritation of the feces has so benefited the disease, as to render it amenable to operation when before it was not so considered. Nevertheless, the feelings of the patients after a colostomy are by no means universally good; a prolapse of the bowel, or the frequent appearance of fecal masses, are very unpleasant sequels. At its best the operation of colostomy is not a perfect one.

When there is time for this procedure it is best to fix the sigmoid in the abdominal wall, and to open it with a thermocautery from two to six days later.

SOCIETY PROCEEDINGS.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Twenty-fifth Annual Meeting, Held at Philadelphia, October 26, 27, 28, and 29, 1897.

(Continued.)

THIRD DAY—OCTOBER 28TH.

MORNING SESSION.

DR. E. A. DE SCHWEINITZ of Philadelphia was appointed a delegate to represent the Association at the Congress for the Study of Tuberculosis which meets at Paris during 1899.

DR. HOWARD S. ANDERS introduced a series of resolutions in which certain churches were commended for having adopted the use of individual communion cups to prevent the spread of disease, and "recommending to the public the general use of individual cups, particularly in schools, on railway trains, in stations, at public fountains, and the like, as contributory to the better preservation of the public health and the prevention of communicable disease." The matter was referred to a committee.

The Committee on Health Legislation presented a report containing a draft of a bill, very broad in its scope, to create a Department of Public Health at Washington.

RECENT RESEARCHES RELATING TO THE ETIOLOGY AND SPECIFIC TREATMENT OF YELLOW FEVER was the title of a paper read by SURGEON-GENERAL GEORGE M. STERNBERG, U. S. A. (See page 613.)

DR. M. P. RAVENEL of Philadelphia then read a paper, entitled

TUBERCULOSIS AND MILK-SUPPLY,

in which reference was made to the fact that about one-seventh of all deaths are caused by tuberculosis, and the statement was made that in the vast majority of cases man contracts the disease through his food, particularly though milk which contains tuberculous matter. As a remedy, the author advocated the careful inspection of milch cows and the condemnation of all diseased animals, such inspection being made at frequent intervals in order that the presence of the disease may be discovered before it has made much progress. He also advised the sterilization by boiling of milk from suspected cows, and said that under no circumstances should it be given to invalids or children.

THE SANITATION OF CARS.

A paper on this subject by DR. GRANVILLE P. CONN, President of the State Board of Health of New Hampshire, was read by DR. SCHWARTZ. It contained portions of a report of a commissioner on the subject of car-sanitation, which seemed to show that not much is to be complained of on this score. It was said that the present means of ventilating railway carriages and keeping them in a sanitary condition would be better adapted to the necessities of the case, if employees were compelled to carry out the rules and regulations adopted by the railroad companies.

DR. JOHN N. HURTY, Secretary of the State Board of Health of Indiana, said that credit for the adoption of the rules and regulations referred to is due the "Big Four" Railroad Company, which was the first to take action in the matter. On this road the cars are cleaned and ventilated at the end of each hundred-mile trip, the cushions and draperies being taken out, aired and dusted, and the woodwork washed; moreover, every car is fumigated once a month. The speaker said that other Western roads talk of adopting similar regulations, and that the subject was recently discussed at a meeting of division superintendents of the Pennsylvania Railroad.

DR. JAMES of Baltimore remarked that some form of automatic ventilation should be provided in cars, and that the windows should not be used for this purpose, as passengers themselves often make proper ventilation impossible by closing windows which ought to be kept open.

AFTERNOON SESSION.

URGENT NEED OF SANATORIA FOR THE CONSUMPTIVE POOR OF LARGE CITIES

was the title of a paper read by DR. S. A. KNOPF of New York.

The author dwelt upon the importance of the establishment of sanatoria for the reception of the thousands of tuberculous patients of the tenement-house districts of large cities, who unconsciously disseminate the germs of the disease among their relatives, friends, and neighbors, or who fill the wards of the general hospitals to the detriment and danger of the other patients. He stated that a consumptive expectorates during twenty-four hours as many as seven billions of bacilli, which, if not properly disposed of, contaminate others. The sputum containing the bacilli becomes dry and pulverized, and is inhaled in the form of dust. The vigorous and healthy are not so

apt to become infected as are the weak and ill-nourished and the very young.

Reference was made to the Adirondack Cottage Sanitarium in New York State and the Chestnut Hill Hospital for the Consumptive Poor near Philadelphia, where excellent results have been obtained in spite of the fact that at the latter institution very advanced cases are received. The author called attention to the fact that in the villages of Goerbersdorf and Falkenstein, where two of the largest German sanatoria are situated, the mortality from tuberculosis has actually decreased among the inhabitants, being now one-third less than it was before the establishment of the institutions. This can be considered as proof positive that a well-conducted sanatorium for consumptives is not a center of infection. He also expressed his belief that these institutions serve as hygienic educators of the people, in that the inmates set a good example as to the proper mode of life for consumptives to lead.

DR. L. F. FLICK of Philadelphia strongly urged the establishment of hospitals for consumptives, in order that the latter might be removed from the home circle. He said that during the last ten years efforts have been made to educate the people of Philadelphia in regard to tuberculosis by the distribution of literature, and that during this period the mortality of this disease has decreased twenty-five per cent., and he expressed the opinion that if this education can be further extended, the disease will be practically stamped out within twenty-five years.

DR. LYDIA RABINOWITCH of Philadelphia then read a paper on

MICROBES IN BUTTER AND MILK,

in which she gave the results of bacteriologic examinations of various samples of butter and milk. In none of her experiments was the tubercle bacillus discovered.

DR. E. T. STEWART of East Orange, N. J., read a paper, entitled

THE PURIFICATION OF WATER AND DISPOSAL OF SEWAGE,

in which he described in detail the working of several of the large sewage-disposal plants of European cities.

INVESTIGATIONS OF WATER-SUPPLY BY THE UNITED STATES GEOLOGICAL SURVEY.

This report was read by MR. F. H. NEWELL, hydrographer of the United States Geological Survey. It discussed from a geologic or engineering point of view the question of municipal water-supply and stream-pollution, and described the work accomplished by the Division of Hydrography in bringing together facts concerning the daily flow of typical streams in various parts of the United States, showing how the quantity varies from day to day, the results and duration of floods and of low water, and other details connected with the behavior of streams.

FROM SEWAGE TO DRINKING-WATER; A STUDY OF THE NATURAL PROCESSES OF SEWAGE-PURIFICATION AND THE MEANS WHEREBY THEIR EFFICIENCY MAY BE INCREASED

was the title of a paper read by COLONEL GEORGE E. WARING, Commissioner of the Department of Street

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NO. 21.

ORIGINAL ARTICLES.

THE OPERATIVE TREATMENT OF LUMBAR (POTT'S) ABSCESS.¹

By JAMES K. YOUNG, M.D.,

OF PHILADELPHIA;

PROFESSOR OF ORTHOPEDIC SURGERY IN THE PHILADELPHIA

POLYCLINIC; CLINICAL PROFESSOR OF ORTHOPEDIC SURGERY

IN THE WOMAN'S MEDICAL COLLEGE; INSTRUCTOR IN

ORTHOPEDIC SURGERY IN THE UNIVERSITY OF

PENNSYLVANIA; SURGEON TO THE HOS-

PITAL FOR CRIPPLED CHILDREN.

In the *Transactions of the American Orthopedic Association* for 1891, I reported a case of external lumbar abscess, and suggested a division of lumbar abscesses into external and internal, according to their

FIG. 1.



Internal lumbar abscess, showing primary and counter incisions.

location, relative to the lumbar fascia. During the past fourteen years, a large number of these cases have come under my observation; a few of the abscesses, of small size, have been absorbed under con-

servative treatment, but a majority have required operative interference of some kind.

When the abscess is small and the contents not very thick, aspiration, with or without the use of antiseptic injections, is often followed by the disappearance of the lesion. This is particularly true of external lumbar abscess. When the contents are thick, or consist of caseating material, incision and

FIG. 2.



Lumbar caries, showing position of cicatrix.

free drainage under aseptic precautions is the only plan of treatment likely to be followed by success. The incision must be made at the most favorable point for drainage, and, when possible, through-and-through drainage by means of a rubber drainage-tube or iodoform gauze, will be followed by the best results. When repeated aspirations fail, or when, for other surgical reasons, they do not appear to be indicated, incision and drainage will be necessary. Aspiration has seemed to me to be unsatisfactory and tentative on account of non-withdrawal of caseous clots, except in the cases above indicated. I have not em-

¹ Read by title at the Eleventh Annual Meeting of the American Orthopedic Association, held at Washington, D. C., May 4, 5, and 6, 1897.

ployed injections of carbolic-acid solution because of the reported fatal results, nor early radical operations, especially erosion of the vertebra, for the same reason. Dr. Rupprecht of Dresden informed me nine years ago that after a fair trial he had abandoned the radical operation, because fifty per cent. of the patients subjected to it had died.

FIG. 3.



A case of bilateral lumbar abscess, showing posterior deformity and lateral sinuses.

The different forms of lumbar abscesses are shown in the accompanying table :

Course.	Exit.
<i>a. External Lumbar Abscesses.</i>	
Burrow between the fasciæ of the quadratus lumborum and abdominal muscles, through the internal oblique.	Posteriorly beneath the external oblique and latissimus dorsi at the outer border of the erector spinæ muscle.
<i>b. Internal Lumbar Abscesses.</i>	
1. Enter psoas sheath.	As psoas abscess.
2. Gravitate beneath the internal iliac muscles over the posterior brim of the pelvis, perforating the great sacrosciatic foramen.	As gluteal abscess, or as iliac abscess.
3. May be directed to the iliac region along the aorta and external iliac arteries.	As gluteal abscess.

During 1894, I showed two cases of iliolumbar abscess, and referred to a third, before the Philadelphia County Medical Society, all the patients having recovered after through-and-through drainage. The operation advocated in these cases is performed under strict aseptic precautions. The abscess is opened

by careful dissection, the incision being made in the direction of Poupart's ligament, half an inch to the inner side of the anterior superior spinous process. The external oblique muscle is divided in the direc-

FIG. 4.

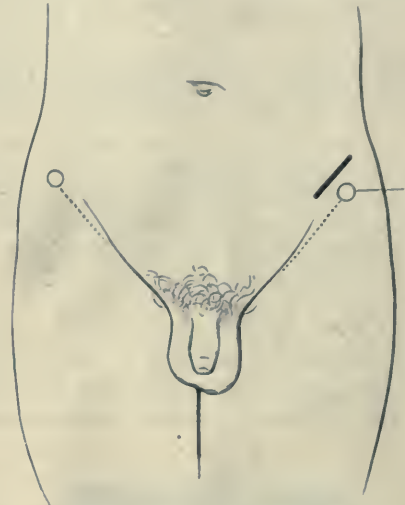


Diagram illustrating position of incision in a case of lumbar abscess.

tion of its fibers, and the internal oblique at right angles, or the fibers are separated. The contents of the sac are evacuated, and a long, heavy grooved director or eye probe is carefully passed up to a point above the sacro-iliac junction, and a straight longitudinal incision made upon it. The counter incision

FIG. 5.

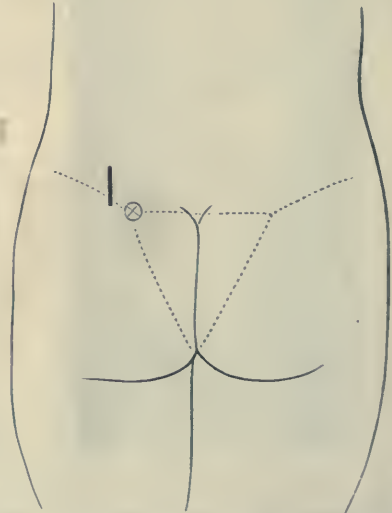


Diagram illustrating position of the counter incision in a case of lumbar abscess.

in two of the cases reported was half an inch to the outer side above the posterior superior spinous process of the ilium. In one case, in which I was associated with Drs. Willard and Ashhurst, it was con-

sidered advisable to remove a portion of the crest of the ilium with a rongeur forceps, so as to permit the drainage-tube to lie flat in the iliac fossa. This appeared to facilitate the drainage and healing of the abscesses rather than to retard them.

The abscess cavity is thoroughly irrigated with boiled water and boric-acid solution. A rubber drainage-tube is passed through it and secured by safety-pins. This is allowed to remain in place for two or three days, after which it is gradually shortened. Half an ounce of a 10-per-cent. emulsion of iodoform is introduced into the cavity, iodoform gauze packed about the wound, and a bichlorid dressing applied.

The indications for this operation are: (1) When the abscess is large and makes pressure upon important organs. (2) When the abscess is increasing rapidly in size. (3) When there is danger of rupture of the abscess into the peritoneal cavity. In the case of a psoas or gluteal abscess it is rarely possible to make a counter opening, and to accomplish through-and-through drainage, a rubber drainage-tube should be inserted into the cavity as far as possible, and the cavity irrigated daily or every other day with boiled water and boric-acid solution, followed by the use of the iodoform emulsion.

In all cases requiring operation it is absolutely necessary to fix the spine as thoroughly as possible by apparatus of some kind. In one of these cases of ilio-lumbar abscess in an adult female, who was under the care of another surgeon, the abscess sinus would not close until the spine was thus secured.

SYPHILIS OF THE NOSE, THROAT, AND LARYNX.

By PAUL TURNER VAUGHAN, M.D.,
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PRIMARY syphilis of the nose and nasopharynx is of extremely rare occurrence, but several cases have been reported in which the infection was supposed to be due to contact with improperly disinfected Eustachian catheters. Erythema, mucous patches, ulcerations, and gummata may at various times be found in the nose of a syphilitic patient. Usually the secondary manifestations are so slight that they are overlooked, although they often assume a severe form in infants. A nasal catarrh in a child, when very obstinate in responding to treatment, is very suggestive of syphilitic origin. When attended by copious secretions with resulting formation of crusts in the nose, thus occluding the nasal air-passages, a very aggravating and troublesome complication is presented. Not infrequently tertiary manifestations occur early in the course of the disease, and occasion extensive necrosis, both of the cartilaginous

and bony septum and the turbinated bodies. The necrotic process is invariably attended by a most offensive odor, which must not be confounded with that present in atrophic rhinitis. There is a decided difference in the odor caused by the two affections, which is immediately noticed by the expert. Fortunately for the patient, when necrosis begins there is a decided impairment of the sense of smell, or in some instances this sense is entirely lost. It must be remembered that in individuals who are deficiently nourished, syphilitic ulceration and necrosis progress much more rapidly than in well-nourished subjects, and the chances of recovery without serious deformity are much less.

While working in the clinic of Professor Störk in Vienna, and that of Professor Seifert in Würzburg, many opportunities were daily afforded me to study the effects, both recent and remote, of the various syphilitic affections of the nose, throat, and larynx. Primary sores of the pharynx, while moderately common in some parts of Europe, are of comparatively rare occurrence in America; but should a patient present himself with a suspicious-looking sore in the mouth, with enlarged submaxillary glands, and if these symptoms are followed by the appearance of a skin eruption, there can hardly be a doubt that the condition is one of primary syphilis of the pharynx. The initial sore, when found in the throat, usually lasts from four to six weeks, and does not differ materially from the primary syphilitic sore occurring in any other part of the body. The throat manifestations of syphilis during its secondary stage occur either as mucous patches or as erythema of the fauces. The latter condition is considered by the best authorities to be merely a passive hyperemia of the faucial mucous membrane, which, owing to the very vascular condition of the tissue involved, causes a dark, purplish-red discoloration of the throat, particularly marked in the region of the faucial pillars and of the soft palate. There are no markedly uncomfortable symptoms produced by the erythema. It makes its appearance in from six weeks to four or five months after infection. Some authorities consider the erythema of the fauces, and the cutaneous eruption occurring in the secondary stage analogous, and it has frequently been observed that upon the disappearance of the cutaneous eruption the faucial mucous membrane undergoes desquamation.

Mucous patches are considered a rather characteristic symptom of syphilis, and when present in the pharynx they appear by preference to locate about the base of the tongue, on the tonsils, and on the soft palate. They usually occur as bluish-white elevations, and may make their appearance at any time after the initial lesion—even a number of years after

—but are generally observed as a secondary manifestation. In the tertiary state, gummata usually appear, and at first are situated just beneath the mucous membrane. During their early stages they are very small, and often pass unnoticed for a long time, but they gradually enlarge, soften, break down, and finally a yellow, ulcerating surface is presented. These ulcerations are of two kinds, superficial and perforating, and are generally located upon the soft palate, or the tonsils. Their edges are rather irregular, but sharply defined, and they are covered with a dirty, purulent secretion. Granulations are frequently found under this secretion. The ulcers usually extend rapidly, and destroy a great deal of tissue. Neither cartilage nor bone appears to offer much resistance to their extension, and consequently it is imperatively necessary to stop their progress by suitable medication as early as possible in order to avoid disastrous consequences, particularly from cicatrization after the healing process begins to take place.

The diagnosis of a syphilitic ulcer in the pharynx is sometimes very difficult to make, but one cannot be far wrong in suspecting as syphilitic any ulcer occurring in the throat which has a floor covered by a dirty purulent slough, and which is surrounded by angry-looking, very much inflamed mucous membrane. It has been my good fortune to observe several cases of tuberculous ulceration of the pharynx, and of malignant disease of the tonsils, which simulated very closely ulcers of syphilitic origin, and in which the diagnosis was determined with great difficulty. If ulceration has already commenced in malignant disease of the tonsil before a patient presents himself for examination, the differential diagnosis will be difficult, but when one bears in mind the history of the case, the fact that tuberculosis and malignant disease of the pharynx are rather rare conditions, that tertiary syphilis in this locality is commonly observed, that the syphilitic condition responds readily to treatment, while malignant tonsillar disease is not materially benefited, and that tuberculous disease of the pharynx is positively made worse, and all the symptoms of tuberculosis increased by antisyphilitic treatment, the diagnosis is somewhat simplified. A very safe rule, and one recommended highly by Lennox Browne, is to put the patient upon treatment for syphilis, and have him weighed daily; if he gains in weight steadily for several weeks the trouble usually is of specific origin; if he gains in weight for several days, and then begins to lose, the affection probably is malignant, while if all the symptoms are intensified, the probability is that the disease is of a tuberculous nature.

I have never seen a primary sore situated in the

larynx, but the erythema, mucous patch, ulcerative process, and gummata, followed later by breaking down of the gummy tumor and subsequent formation of cicatricial tissue and occurrence of stenosis of the larynx in various degrees, are, with the possible exception of the mucous patch, common pictures to the laryngologist.

A quite marked symptom in a great many cases of syphilis in its early stage is the appearance of laryngeal catarrh, and only in one particular does this differ from an ordinary catarrh, the last-named variety being usually relieved by topical applications, while they are only of limited value in the specific type, one being compelled to resort to antisyphilitic treatment in order to relieve the condition. The erythema is not so marked and is not so characteristic as when present in the pharynx, but it is sufficiently noticeable, particularly when associated with alternating patches of red and white situated on the vocal cords, to lead one to suspect its specific origin. Pain is generally absent. The condition may last a long time if untreated, but shows no tendency to pass into one of the graver manifestations of syphilis. If the vocal cords are involved there may be much impairment of the voice; in fact sometimes the voice is completely lost. Mucous patches are of exceedingly rare occurrence in the larynx, but when present are generally situated upon the upper surface and free margin of the epiglottis, on the arytenoids, or on the false vocal cords, sometimes being found on the interarytenoid commissure. The mucous patch in this position, as elsewhere in the body, is resistant to treatment and is very likely to recur.

Probably the most common manifestation of the disease in its tertiary form in the larynx is ulceration. This is preceded by an infiltration of the mucous membrane with inflammatory products, and is usually diffuse in character. Gummata are commonly situated near the posterior commissure, upon the arytenoid cartilages and epiglottis. At first they are small and of the same color as the contiguous mucous membrane, but gradually they enlarge, soften, a small yellow spot appears in the center of each gumma, and finally a destructive ulcerative process begins. This is usually rapid, and frequently large areas are completely destroyed. When it occurs on the epiglottis entire destruction of the valve may occur before the patient can be brought under the influence of medicine. When much tissue has been destroyed, there will of course, after healing begins, be a formation of cicatrices, with resulting stenosis, and sometimes distortion of the larynx. When this occurs, the voice is permanently much altered in character.

In regard to the treatment of syphilis, when

occurring in the nose, throat, and larynx, I know it is generally considered that to await the development of secondary symptoms and then begin constitutional treatment, is the better course to pursue; but it appears to me that more favorable results are obtained when the patient is put upon some one of the mercurial salts as soon as the diagnosis of syphilitic infection is absolutely decided upon. Local cleansing of the primary sore with some mild antiseptic, as boracic-acid solution, and dusting it with iodoform, eucalypti, calomel, or better still, with iodoform (a most efficient but disagreeable remedy on account of its penetrating odor) is all that will be necessary during the first stage. Caustics locally applied during this stage undoubtedly do harm. Upon the appearance of secondary symptoms, either inunctions with mercurial ointment, or the internal administration of some salt of mercury, will cause subsidence of the symptoms. When a mucous patch occurs it should be touched repeatedly with tincture of iodine, or solid nitrate of silver. Catarrh of syphilitic origin requires the administration of ferruginous preparations, and the spraying of the nasopharynx with mild antiseptic and alkaline solutions. In the coryza occurring in infants, the nose should be sprayed *cautiously* with a weak solution ($2\frac{1}{2}$ grains to the ounce) of cocaine, or, better still, should be cleansed, particularly when the crusts are very adherent, with a ten-per-cent. solution of menthol in olive oil. Menthol is somewhat similar in its action to cocaine; its anesthetic action is very much less, but it is particularly efficient in that it relieves the congestion of the turbinate bodies and allows respiration to take place through the nasal passages. Upon the appearance of tertiary manifestations the administration of iodide of potassium or sodium is indicated, beginning with doses of from five to ten grains, depending upon the tolerance of the patient, three times a day, and increasing it several grains daily until the progress of the disease is checked. In some cases it is best to combine the iodide with mercurial inunctions. It must also be kept constantly in mind that the alimentary canal, the excretory apparatus, and the skin must receive particular attention. Wholesome, nutritious food is absolutely essential to a sound condition of the alimentary tract. Mild salines and laxatives are occasionally required to stimulate excretion, and nothing is of more benefit in keeping the skin in a healthy condition than warm or hot bathing, which should be regulated by the attending physician. Smoking, and the drinking of alcoholic beverages should be prohibited.

A Surgeon Nominated for Mayor.—The English surgeon, Mr. Thomas Webb Fowler, has been nominated for the mayoralty of Coventry.

**THE PRESENT MORTALITY OF DIPHTHERIA;
UPON WHAT ITS FURTHER REDUCTION
BY THE ANTITOXIC SERUM
DEPENDS.***

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THE American Pediatric Society is authority for the significant statement that the results of the serum treatment of diphtheria will gradually and still further improve.¹ The reasons given for this opinion are: that (1) antitoxin is still used at too late a stage of the disease, either on account of procrastination on the part of the physician, or objections on the part of relatives; (2) it is often administered in a half-hearted way, and in doses one-tenth to one-fourth as large as they should be. It has frequently been observed that the percentage of recoveries under this treatment has steadily increased from the beginning. The present mortality from diphtheria—the lowest ever recorded—is pronounced by most observers of large experience with the remedy, especially in private practice, as being too high to represent its powers. "From the most trustworthy statistics which are now available, it appears that the actual mortality from diphtheria (including membranous croup) has been reduced at least one-half by the general adoption of the serum treatment; and that in cases injected during the first two days, the mortality is less than five per cent."²

The mortality from diphtheria under the antitoxin treatment (all brands of the remedy as found in the market being used, and all cases being included irrespective of the time when the treatment was inaugurated) may be stated as follows:³ diphtheria in general, eight to ten per cent.; laryngeal, twenty-one per cent.; operative-laryngeal, twenty-seven per cent.; non-operative-laryngeal, seventeen per cent.; general mortality when antitoxin is used reasonably early, five to seven per cent.; number of cases requiring operative interference, seventeen per cent.

A study of the great volume of literature on the subject shows a pronounced gradual improvement in potency of the serum and the method of its employment. A third element of progress is more than merely implied, *viz.*, a growing appreciation of its efficiency and harmlessness, and a consequent readiness on the part of the physician to employ it. The progress heretofore made in gradually reducing the death-rate of diphtheria⁴ and robbing this disease of its long-sustained high mortality has been made along the line of these three correlated elements of progress.

*Read at the Twenty-fifth Annual Meeting of the American Public Health Association, Held at Philadelphia, October 26, 27, 28, and 29, 1897.

The writer's experience, dating back to the first case treated with antitoxin in Philadelphia (Sept. 22, 1894), corresponds with that of many others, and must become the general experience of the profession in order that the full powers of the remedy may be appreciated. Whereas, in his first cases doses ranging from 400 to 800 units were timidly administered late in the course of the disease (when the condition had become hopeless and other recognized remedial agents had been employed without avail), now, curative doses ranging from 1000 to 4000 units, according to the severity of the disease, are early and boldly given. From three to ten times as many antitoxic units are administered with increasing confidence in from one-third to one-tenth the amount of serum at first required. All these factors have worked together to render the results of the employment of antitoxic serum more favorable.

The further reduction of mortality by the serum-treatment will depend (1) upon still greater improvement in the production and selection of the remedy; (2) upon the general and hearty acceptance of the established principles underlying serotherapy, and (3) upon the employment of the remedy upon a purely rational, rather than upon an empiric basis.

1. The greatest improvement yet made in antitoxin lies in the strength or concentration of the serum.⁵ The most concentrated product now supplied to the profession contains 500 antitoxic units to each cubic centimeter of serum. The serums now available vary in strength from 50 to 500 units per c.cm.; the major portion containing from 100 to 200 units per c.cm., and are not standardized, *i.e.*, a specified number of units is contained in a variable quantity of serum. The great advantage of concentrated serums has been recognized from the first, and only such products are recommended by the American Pediatric Society.³ The smaller quantity of serum required to secure a full curative dose permits of the use of a much smaller syringe and insures quicker absorption. An antitoxin of 400 to 500 units to each cubic centimeter may be administered in full curative doses by means of an ordinary hypodermic syringe. When a small quantity of serum and a small instrument are used, a little patient is not so easily frightened at a time when it is important to avoid every semblance of excitement. For the same reason it is advantageous to administer the serum between the scapulæ where it is not possible for the patient to witness the procedure.

The advantages of smaller dosage and earlier absorption are, however, always secondary to the gain in time required to secure the full therapeutic effects of a given dose. This gain, by the employment of the strongest serums, amounts to several

hours, and is the means of saving many otherwise hopeless cases. This result is due to the smaller quantity to be absorbed and the greater rapidity of absorption. Experience has taught that the more concentrated the serum the more pronounced and immediate are the therapeutic effects. The superiority of tinctures and fluid extracts has led to the almost complete disuse of infusions. Such will also be the case with the weak antitoxic serums when the superior value of the concentrated product becomes generally known. Since the function of antitoxin is to neutralize toxins it may be conjectured that a maximum limit of advantageous concentration probably exists. However, this limit has not yet been reached, and since highly concentrated serums are very difficult to obtain, such a limit is probably not practicable.

In the early days of the antitoxin treatment it was proper to speak of obtaining effects within twenty-four to forty-eight hours. During this time many severe cases necessarily terminated fatally, especially since repetition of the dose was delayed till this period had fully elapsed. At present effects are expected within twelve to eighteen hours, and are early secured in proportion to the degree of concentration of the serum. The general use of concentrated antitoxins of uniform quality will insure increasing success in the treatment of diphtheria.⁶ The importance of great care in selecting an antitoxin cannot be overestimated, as some of the serums upon the market have been proved to contain but one-third to one-half the potency stated on the label.^{7 8 9 10}

2. No therapeutic principles are more firmly established than those upon which the serum-treatment of diphtheria is based. An adequate appreciation of these principles as well as of the indications for the administration of the remedy will produce better and better results. "If an animal has been artificially protected against a particular infection (*e.g.*, diphtheria), its blood or serum acquires the power, when injected in sufficient quantity into another animal, of directly transmitting immunity to the latter."¹⁰ This is a law so firmly established, experimentally and clinically, that it is appropriately called one of the "articles of faith of the bacteriologist." There is no reason why the profession should not accept it. Such acceptance will prove very salutary to the further reduction of the mortality-rate of diphtheria.¹¹

As the remedy is antidotal and the lesion of diphtheria toxic, it follows that in no other disease is an intelligent appreciation of the immutable relation existing between remedy and disease so potent a factor in obtaining the highest possible results from treatment. Similarly, the appreciation of the importance of the early administration of antitoxin is es-

sential to the highest success. The lesion of diphtheria being toxic, and death, if not caused by obstruction to respiration, being due to poisoning, it follows that the longer the tissues are exposed to the action of the toxin, and the more virulent the poison is, the more surely fatal will be the result. To appreciate this is to understand the necessity for the administration of maximum doses in malignant cases and in all cases seen late in the course of the disease, and also to know the importance of supplementary, general, sustaining, and tonic treatment. Jacobi¹² has well said that "many cases might be saved by the timely use of a few grains of digitalis, camphor, musk, or other cardiac tonics." It is expected that a physician will know beforehand whether or not, in a given case, the heart will be likely to carry its owner through an inflammatory or infective process in the absence of sustaining treatment. Incidentally, it may be remarked that when the laity, instructed by the profession, understand the importance of reporting all cases of throat disease early, a further reduction of mortality will easily become possible. The tentative treatment of diphtheria is sufficiently condemned by centuries of high mortality under its general employment.¹³ Harsh mechanical interference merits the same fate.

3. Antitoxin must be employed in the same manner as any other antidote in order to obtain the best possible results. No rule can be formulated for dosage, except that it should always be strictly graded to the severity of the case. A dose containing less than 1000 units should not be regarded as curative, and the general acceptance of this truth will be powerfully efficacious in reducing the present mortality. Curative doses of 500 units, experience has proved, are not to be relied upon. Treated very early, it has happened that several successive cases responded almost miraculously to such doses, while, on the other hand, several others, following these in succession, speedily proved fatal. The severity of the infection is not easily recognized early in the course of the disease. Clinically, it is probably impossible to determine which cases will require the antidotal effect of but 500 units.

The importance of the initial dose, as compared with any other that may be subsequently required, cannot be too strongly emphasized in this connection.¹⁴ No maximum dosage has as yet been determined, and probably never will be. Reports from many large users of diphtheria antitoxin show that at present curative doses ranging from 1000 to 6000 units are employed, and, when graded to the severity of the case are yielding the best results. The necessity of a second dose is evidence that the first did not contain enough antitoxic units. During the in-

terval the tissues are still exposed to the unneutralized toxins, and, meanwhile, the necessity for the remedy is increasing and the resistance of the patient is decreasing. When repetition of the antitoxin is necessary, the interval between doses should be short—when concentrated antitoxin is employed, never less than twelve hours. With this end in view, in the malignant form of the disease from 2000 to 4000 units should be injected as early as possible. One dose of 2000 units, experience has explicitly proved, will result in a larger proportion of cures in this form of diphtheria than will three or four doses of 1000 units each, given at intervals of from twelve to thirty-six hours. The writer's first antitoxin case terminated fatally for want of a sufficiently large initial dose. By aggressive treatment truly moribund cases are saved, as testified by many observers.

The double function of the diphtheria antitoxin is to neutralize toxins and arrest the disease. In pharyngeal types the danger is in early toxemia; in laryngeal types, from suffocation. In the former abundant vascularity and glandular structures favor rapid absorption, and in treatment facilitate the arresting of the disease. In the latter the dense basement membrane underlying the local lesion retards absorption, and in treatment resists the antitoxin. For these reasons, in severe cases of the former, especially when nasal, and in all cases of the latter, the initial dose should never be less than 2000 units.

It should be remembered that it is possible to neutralize the absorbed toxins so slowly or so late that death results from the damage sustained before the remedy was given. Likewise, in laryngeal cases, care must be exercised lest suffocation result from the copious expectoration which follows the full effects of the remedy.¹⁵

While the serum treatment has greatly simplified the management of diphtheria, reduced the personal risk to the physician, and already at least doubled the number of cures formerly obtained, each case continues to be a subject for special study, especially, in regard to the individual adaptation of doses and other measures of treatment.

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WATER PURIFICATION HYGIENICALLY CONSIDERED.

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(Continued from page 635.)

THE cost of constructing a complete filter-bed an acre in size varies from \$20,000 to \$100,000, according to the topography, the availability of suitable sand and other material, the cost of labor, and other elements. An open filter-bed, having tight concrete bottom and sides, with proper regulators and piping, not including settling or receiving basins, may roughly be said to cost at least \$1 for every square foot of filtering surface. Half as much again must be added for a suitable covering to prevent the growth of algæ and keep the water of more even temperature. In northern localities some covering is desirable because of the considerable impairment in efficiency caused by ice during winter. At Hamburg, open filters are employed and successful cleaning of an ice-covered filter is accomplished, without the usual removal of the water, by using a sort of trawl scraper suspended at the right level by floats and moved across the sand-bed. This is explained and very well illustrated in the *Journal für Gasbeleuchtung und Wasserversorgung*, 1897, page 4, a portion of the illustrations and summary of which appeared in the *Engineering Record* for May 1, 1897.

When suitable fine sand is not procurable in the neighborhood, the expense of procuring it may be too great to warrant its use. Crushed quartz, especially adapted for sand-filters, costs at the rate of more than 60 cents per cubic foot, weighing about ninety pounds. When the cost of the sand is thus prohibitive, and when ground enough properly located is not to be obtained at a reasonable price, recourse may be had to mechanical filters, which occupy much less space and require much less sand, since water flows through them fifty or more times as rapidly as through the same area of gravity sand-

bed. While these are more expensive to construct, the operating expense is much less than that of mechanical filters, being mainly that of cleaning and restoring the surface. It may be roughly estimated at nearly \$10 per million gallons of filtered water. It is claimed that a few plants require much less than half this outlay, while others cost half as much again. At Lawrence, Mass., the cost was less than \$7 per million gallons during 1895. Nearly forty per cent. of the expense was for removing ice, while less than half was for scraping and replacing sand. Nearly fourteen per cent. of the charge was for washing the removed sand.

Filter-galleries, situated in the low banks of rivers, are fed rather by ground waters from the upland side than by filtration of river water, which does not filter with practicable speed through the very resistant mud and silt. When the river rises and its water flows into the galleries through coarse sand and gravel, it is likely to render the supply less wholesome by reason of the ease with which bacteria can pass through. Thus, at Dresden, where a ground water-supply of this sort is used for a demand a third larger than originally planned for, it is found that when the Elbe rises more than a meter above its normal level, the bacteria of the water (usually twenty to forty per cubic centimeter) increase to several thousand. With this increase a greater number of gastro-intestinal disorders than usual occur, especially among infants, and their mortality is increased (Meinert). For such filter-galleries it is essential to have water-tight barriers constructed to keep out any inundation or any inflow of water through ground that is not of a perfectly filtering character.

While figures may prove very misleading when not carefully interpreted in the light of the exact conditions obtaining, it is not un instructive to give a few statistics to illustrate the hygienic value of good filtration. The great cholera mortality (8200) at Hamburg during 1892, while the similarly situated neighboring city, Altona, using worse water from the same much-polluted river was comparatively free, was because the latter had good filtration, while at Hamburg the old filters were defective and the new ones not quite finished. The typhoid mortality there is only 58 deaths per 1,000,000, while at Altona it is 41, and at Berlin, between 40 and 65. Amsterdam, filtering water from sand lakes or canals, has but 28 deaths per 1,000,000. These figures compare favorably with those of cities supplied with first-class mountain water, Munich having 32, Vienna 40, and Nuremberg 42 deaths from typhoid per 1,000,000. As against the results of these naturally or artificially pure waters, may be quoted Maline, supplied by

shallow surface wells, the mortality there being 993.¹ This, however, is exceeded by the Chicago typhoid death-rate for 1891, which Hill gives as 1600. He gives that of Pittsburg (for 1893) as 1110, St. Louis (1893) as 1030, and of Lawrence, Mass. (1892), 1020.

Artificial sand-plate filters (Fisher system) are said to be employed with great success at Worms, Westerhüsen (near Magdeburg), and at the Müggel-lake intake near Berlin. The writer has never tested these, but credible reports would make them seem about equal to good gravity filters as regards bacteria-removing efficiency, while the yield is proportionately much greater. If thorough tests, carried out impartially at the last-mentioned station, confirm the excellent results claimed elsewhere, it may well be believed that this method, which seems the revival of an older idea, is practicable on a large or small scale. The plates are easily and quickly cleaned and, like mechanical filters, have the advantage over gravity sand filter beds that they can be sterilized promptly and completely by steam in case of typhoid, cholera, or other infection having entered. They are very strong and have the especial merit of simplicity and freedom from increase of bacteria at the beginning of the flow just after cleansing, as also under a considerable increase of pressure. This would mean that attempts to overwork them, so common with mechanical sand-filters, would not produce such bacteriologically bad water as results from the latter under such circumstances. They are said to be composed of fine sand and finely ground soda-water-bottle glass mixed and heated to 1200° C. The slabs are nearly forty inches square and four inches thick. They are screwed together and the edges cemented. A number of them may be arranged in line to form a pipe into which water filters from without.

In some cases in which filtration is deemed necessary for a municipality, an industrial plant or even individual systems, the slow, gravity-sand-bed system above considered appears impracticable, or less desirable than mechanical filtration, even for a large supply. This may be due to remoteness from a supply of good sand, or the ground may be limited, or other economic reasons may obtain. Whatever make be selected, even including the invertible patterns as that of Kröhnke or of Carl Schultz, it will be quite similar to its numerous rivals. These mechanical filters operate by causing the crude water to flow rapidly, usually under hydrant pressure, through comparatively small masses of fine sand, coke-powder, or similar substance enclosed in cylinders of wood or iron. Mere sand (or coke, etc.) alone will

not be capable of holding back many bacteria, nor will it strain turbid water sufficiently clear, but the preliminary addition of one or two (or more) parts of a coagulant, such as an alum or iron salt, to one hundred thousand parts of water usually causes the formation of a gelatinous film which, settling within an hour upon the surface of the sand and also to a certain extent between the grains, when skilfully managed will cause such a filter to produce clear water which compares favorably with that from good gravity sand-filters. A permeable bottom supporting the sand allows water to flow downward into the outlet and also permits purified water to be driven backward for the (from one to five) daily washings. Upon this a layer of coarse sand or crushed quartz about a foot deep should be placed. This supports a two-foot layer of fine sea sand or crushed quartz (or coke, etc.) of an effective size of from .3 to .5 mm. (from $\frac{1}{80}$ to $\frac{1}{50}$ of an inch). Into the space above this, crude water for purification is introduced after alum has been added.

Both as an expert trying to aid in obtaining the best possible results, and also as an impartial scientific observer wishing to determine how widely such filters vary in efficiency, the writer has tested many of these. While his investigations have been less complete than those conducted at Providence, R. I., during 1893, and at Louisville, Ky., during 1896, as regards thorough and constant study with one kind of water, they yet serve to show the results accomplished by such filters under ordinary as well as expert management in actual every-day use under practical working conditions. Tested regularly and irregularly in this way, mechanical filters generally show less constant and perfect results than do gravity sand filter-beds, but this is more owing to lack of careful management and insight into the principles of operation than because of any inherent defect in the method. Almost all of the various makes will do excellent work, clearing muddy water and reducing the number of bacteria to less than one per cent. of the original amount; and yet some of the best makes, as typified by filters established in permanent operation, and referred to in the makers' circulars, have been found to produce an effluent having more than fifty per cent. of the bacteria (of all varieties) occurring in the crude water. On the other hand, some of them at times are found, without any unusual care, to produce water almost entirely free from bacteria, provided they are worked at much less than their full capacity. Others, when overworked, offer insufficient resistance to bacteria and turbidity. They are comparatively complex and usually dependent upon constant skilled supervision. Their all-important bacteria-separating film, unlike that of the surface of

¹ Smee, *Lancet*, March 13, 1897.

gravity sand-beds, not lasting for weeks perhaps when once established, but rather being destroyed by the necessary washing at least once daily, and perhaps five times, the operation cannot be so well controlled as that of the slow filters. With the latter, the yield may be stored in a separate basin until the usual gelatine test shows whether the film is separating bacteria properly. But with mechanical filters the essential filtering-film must have been removed, as also a number of subsequent ones, under conditions of economic working, long before a bacteriologic test can have been completed. This is a very important consideration especially at times of epidemic and actual infection of the water.

A point in favor of mechanical filters is that they can be completely disinfected by steam or boiling water, the most satisfactory of all means. Within these filters the sand does not remain in as permanently good working condition as in those parts of gravity sand-beds which lie beneath the surface. Accordingly, it needs to be steamed or else scoured with a four- or five-per-cent. solution of caustic soda, or both processes may be employed, at least twice yearly. Otherwise, bacteria, not removed by the daily washings, grow in time so numerous as to contaminate the effluent, and among these may be disease germs. If their presence be suspected, and certainly if demonstrated by culture-tests of the sand or water, sterilization of the filter is necessary. Mechanical filters involve considerably greater expense for operating than do gravity-beds. On the other hand, the plant costs less than the best water-tight slow sand-beds complete. Although alum costs less than two cents a pound, this proves a costly item when used for large quantities of water. When the filter is working well, the proportion of alum used may be only one part to a hundred thousand parts of water, or less than half a grain to the gallon. In practice, however, this proportion of the coagulant is often considerably exceeded, whether through carelessness or because of very muddy or peaty quality of the water, and this of course increases the expense. From such permissible small amounts of alum as remain unchanged in the purified water we cannot recognize any danger to health or detrimental influence upon boilers or industrial processes. This alum is almost entirely decomposed in making the desired film of flocculent alum hydrate and of a combination with organic matter present. The sulphuric acid set free combines with the earthy carbonates present and thus tends to become neutralized. At the beginning of filtration, after the film and dirt have been washed out, an excess over the usual minute amount of the coagulant is commonly added to hasten the formation of the necessary film. What-

ever of the salt remains uncombined is washed out with the first few minutes' flow of water. Since this water has very many bacteria present, it is purposely wasted from well-managed filters. This amount of water wasted varies from three to eight per cent.

While only vertical cylinders are spoken of above, it should be mentioned that horizontal cylinders are in some cases employed in large plants, yet both are the same in principle. Even an invertible one, such as that of Mr. Carl Schultz, or like those used for the Kröhnke deferrating process, work in practically the same way, the peculiar construction being only a modification designed to facilitate cleansing. Mechanical filters may be combined to any number to make "batteries" and thus millions of gallons be produced by one plant. Individual filters vary in size from one foot to ten feet in diameter. Since the water is meant to flow through nearly sixty times as rapidly as through a slow gravity filter-bed, a filter ten feet in diameter, and having an effective filtering surface of about seventy-eight square feet, would be expected to yield from 100 to 250 gallons per minute, but should not be allowed to exceed that amount. Filters one foot in diameter are capable of yielding 100 gallons per hour, and in complete working order cost not far from \$100. They are intended for private houses and serve the purpose of clearing all the water for the household under ordinary conditions, but they cannot respond to sudden demands for a large quantity of good filtered water as the combined draft for laundry, and other purpose, coming at the same moment would produce unsatisfactory water. Accordingly, storage-tanks are needed, and wood will usually be selected as the material. This, and also the filter, usually do not receive careful attention and the water is then too often likely to yield many bacteria when tested. Pure drinking-water would be better insured by a battery of Berkefeld filter-tubes kept in good order and sterile, which, even at present high prices, would prove less costly. A drawback to some of the best varieties of mechanical filters is threatened litigation if the coagulant be added just as the water enters the filter. The Hyatt patent, controlling this, expires within four years. The use of a preliminary settling-tank or basin is not thus restricted, but seems less satisfactory.

Sedimentation is of recognized value in reducing the number of bacteria as well as turbidity of a mass of water, which can remain at rest or nearly so as in storage-basins, and in lakes, or lake-like enlargements of rivers, when the current is very sluggish. Various bacteriologists have found this to be the case, and the writer's studies of lakes and reservoirs, especially when much silt was present, have tended to

confirm this view. The presence of settling-basins, with or without aerifying arrangements for the inflow, is of value as an auxiliary, but is not of enough absolute potency to warrant exclusive reliance upon such means. In most of our streams and bodies of water which receive bacterial contamination from sewage and other filth, sedimentation does not seem to accomplish much. It is, as already said, the element of great dilution which seems to be the chief factor in improvement of the water. Light (which favors the production of algæ) lessens bacteria, especially when the water is well aerified, according to most experiments conducted in that directions; and strife among bacteria is regarded as aiding the process. If a small volume of infectious washings from a privy-vault, manured field, or sewage outlet, mingle with abundant water of a large stream, the tendency to diffusion throughout the large volume of water causes a sample taken lower down stream to show many less bacteria, as well as greatly diminished chemic impurity, unless some intervening contamination complicates the conditions. In small streams, flowing through densely peopled industrial districts, this natural purification is so much less potent that English investigators have declared that a stream much polluted cannot again become pure. In our copious rivers, as also on the Continent of Europe, such an assertion is easily disproved, yet the experiences of some of our cities show that extreme vigilance must be exercised if the water-supply comes from a contaminated river. An arbitrary statement that fifteen or even fifty miles of flow insures the destruction of all harmful contamination is not always substantiated by facts. In this connection, although the same principle has not been shown to be operative in our streams, it seems proper to mention Hankin's observations on the peculiar quality of the water of the great rivers of India¹, in which certain acid substances, volatile on heating, destroy all cholera bacilli that enter the streams, although these dangerous germs increase vigorously in well waters of those regions.

Observation shows that storage for months tends to lessen or remove color and odor from water; but when light is not excluded, algæ are likely to flourish, if nitrogenous elements in an assimilable form, and special mineral constituents, and other conditions, are present to favor their growth. Even when such storage is practicable, it is always preferable to have water in the beginning so pure that none of the causes of odors, such as infusoria, sponges, nostoc, etc., or any dead animal or vegetable matter, are likely to occur. Although such waters are not known to have directly caused disease, a fishy, or other re-

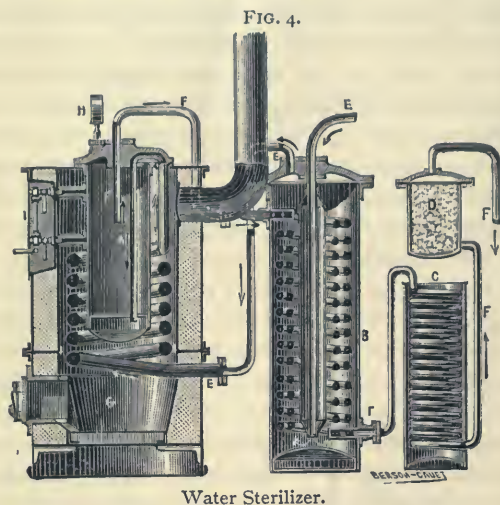
pellant odor or taste, can make a water so offensive that people will not drink it, and it will arouse more emphatic protest than even the known presence of disease-causing germs. If a reservoir be created by damming up and overflowing fertile slopes or meadows, the soil should be dug away so as to remove roots of grass and bushes, may be to a depth of more than two feet; otherwise, decomposing organic matter may cause bad odors to arise in water stored there.

Heat kills the germs of disease and all other living things. If water be boiled long enough, no bacteria or other organisms will remain alive in it. This, in its practical bearings, has long been recognized. The writer pursued a prolonged and careful series of experiments some years ago in this country (chiefly in the Carnegie Laboratory) and in Koch's laboratory in Berlin, employing various natural and artificially infected waters, and demonstrated that simply bringing water to nearly the boiling-point, and then allowing it cool gradually, sufficed to destroy the elements of infection. Thermophilic bacteria and some common kinds require very much longer heating for their annihilation, but practically a brief heating answers the hygienic purpose. This means can be employed almost anywhere and is to be recommended at least as a makeshift under urgent circumstances, as when the water-supply is bad or even suspicious and yet no adequate purification obtains. Since boiling drives off air and also carbonic-acid gas (causing the separation of lime and magnesia), the water in most cases is thereby made somewhat less palatable; although the taste of some malodorous and unpalatable waters is improved by heating. Subsequent aerification, as by use of a bellows or more elaborate appliance for exposing the water to as pure air as possible, effects an improvement. The addition of a small amount of tea improves the taste for some people.

Within the last ten years several economic contrivances for heating water to the boiling-point and cooling it to within a few degrees of its original temperature have been perfected by Yaryan, Siemens, Grove, Rouart, and others. The apparatus of the first-named inventor, as designed for the use of a large municipality, was carefully tested by the writer in Toledo and found capable of completely sterilizing the hydrant water of that city. The principle employed by all these independent inventors is a series of pipes so arranged that by connection the cold inflowing water cools the outflowing sterilized stream and is at the same time gradually heated before it arrives at the boiler. Thus a minimum expenditure of fuel is required. The accompanying illustration (Fig. 4), supplied through the courtesy of Rouart Frères of Paris, shows an apparatus which is claimed to have

¹*New York Med. Jour.*, April 10, 1897, p. 503.

achieved a practical success. The arrows indicate the course of the water from the inflow E. to the outflow F. The yield is of better quality than non-aerified, boiled water, since not much more than half of the oxygen is lost in a well-constructed apparatus. Lime and magnesia are considerably reduced, as also are the other mineral salts and the organic matter. Despite the theoretic merits of these economic sterilizers for water which is clear but infected, they have not found practical acceptance unless in a very limited way.



Distilled water is considered desirable for the most economic and satisfactory results in certain processes, as also for human consumption, when the natural supply is of poor quality, and especially when it is charged with poisonous or other mineral salts. To supply this need at a low cost, on a large scale, excellent stills exist. On shipboard, particularly when the vessel is on a prolonged voyage or cruise away from ports where good, fresh water can be obtained, distilled water, easily prepared and palatable, is not only very convenient as saving the space of storage-tanks (too often defective) and casks likely to become foul, but is also of considerable sanitary value. This is evidenced by statistics of the naval and marine service before and after the introduction of the regular use of the Baird, Niemeyer, and other excellent stills. All properly constructed ones yield water free from bacteria if due care be taken to have the condensing and outflow portion and any filter there sterilized by steam before using. Instructions should also be given to waste for ten or twenty minutes the first flow of water after long disuse of the apparatus. This is to avoid chemic impurities. Lead should never enter into any part of the construction of tanks or stills, for the danger of poisoning is considerable, even from solder. Tin shown by assay to be pure should be used for joints of tin plates and tubes, although

more difficult to work with than solder. Iron rusts, and is, therefore, inferior to well-tinned copper plates or drawn brass coils well tinned inside and outside. Abundant sea-water cools the steam coils by flowing in at the bottom and out at the top on one side of the tight casing inside of which are the smooth or corrugated coils of vertical pipes into which steam under low pressure enters at the top. At the lower end of the condenser the distilled water flows out or is drawn out by a pump where a filter (of asbestos or pure bone, charcoal, and sand) is present, for the purpose of relieving the water of the whitish flecks and oily taste which come from slight quantities of lubricating oil going over with the steam. When the steam pressure is high this oily taste is more likely to occur than when the pressure is quite low, as from an evaporator especially introduced for the sole purpose of vaporizing sea or other water in order that it may, on condensation, become distilled water. From a perfect still very pure distilled water can be produced, having none of the salt or other undesirable constituents of the original water. If petroleum lubricants are used, they tend to cause an increase of ammonia above the small amounts which can be detected in almost all distilled water. At the end of every voyage the filter attached to the condenser of a vessel's still should be cleansed and sterilized by steam sent through the still. The distillate should also be tested from time to time to detect any leakage of the cooling salt water into it. One need only add a drop or two of a solution of silver nitrate, slightly acidulated with nitric acid. If any salt has entered the distilled water, this reagent will produce a visible whitish cloud or precipitate when added to the water in a glass.

Aerification of distilled water should be so managed as to introduce no bacteria, and certainly no harmful ones. Previous filtering of the raw water and boiling long enough to insure the driving off of the more volatile organic matter previous to distillation is regarded by Mr. Hallock, the expert chemist of the Schultz establishment, as the best means of preventing the usual taste of ordinary distilled water, and more satisfactory than the preliminary addition of such an oxidizing agent as permanganate of potash. For the Witteman still the water is twice boiled and superheated before being vaporized. Thus, for artificial ice or artificial mineral waters the maker who is careful enough to use distilled water avoids the necessity of aerifying it, which process too commonly allows the introduction of bacteria of numerous kinds which may be in the air, and which, despite cotton and other filters of the air, are always found in waters of most establishments.

(To be continued.)

CLINICAL MEMORANDUM.

A CASE OF POISONING FROM EATING LOBSTER.¹

By CHARLES SCHRAM, M.D.,
OF NEW YORK.

THE case which is here presented is offered with some diffidence, as I am aware of the vulnerable points in the diagnosis. However, it is the one at which I arrived, and which has been strengthened by the peculiar complex of symptoms manifested during the progress of the illness.

The patient, a married woman, twenty-nine years of age, was born in Russia. I saw her for the first time on the afternoon of October 9th. Her health had always been good; digestion excellent; disposition calm and cheerful. She is the mother of two healthy children, the youngest being ten months old. Nine days previous to the time the illness began a death somewhat unexpectedly occurred in the family the shock of which caused mental depression and impairment of appetite. Four days before coming under my observation the patient partook of boiled lobster, of which other members of the family also ate. Three days later persistent and uncontrollable vomiting began, and the vomitus at first consisted of food taken that morning, then of bile, mucus, and finally everything swallowed was at once rejected. Concomitant symptoms were obstinate constipation, frontal headache, dizziness, excessive thirst, gastric and abdominal pain, severe pain in the limbs and in the small of the back, and ringing in the ears. These symptoms had continued up to the time of my first visit. The patient appeared to be a robust, well-nourished woman. She was anxious, irritable, and apprehensive as to recovery. Her face was pale; tongue thickly coated; breath fetid; skin hot and dry; pulse hard, 112-116 per minute. The lungs were normal; the heart-sounds sharp, but not indicative of disease; abdomen somewhat distended and tympanitic. The abdominal tenderness was general, though more acute over the epigastrium and course of the colon, particularly at the flexures of the latter; there was gurgling on pressure.

I prescribed 8 grains of calomel in divided doses, but through a misunderstanding the patient received eight, $\frac{1}{4}$ -grain tablets; she was given boiled water in abundance, and brandy in dram doses repeated every two hours, no food being allowed. In the evening the temperature rose to 102.5° F., and remained near this point until the crisis of the illness, which occurred three days later. The day following my first visit the vomiting ceased. As the bowels had not moved, she was given 8 grains of calomel in four equal doses, which caused two small liquid movements. There was no amelioration of the symptoms except the emesis. Meanwhile, the bacteriologist, to whom a specimen of the blood had been sent, reported that the Widal test gave a positive reaction; in fact, Dr. Park of the Health Department assured me that I undoubtedly had to deal with typhoid fever. On the strength of this re-

port I placed the patient upon a fluid diet, sponge-baths, and β naphthol-bismuth, beginning with 5 grains every three hours.

On the morning of October 12th the general condition seemed much improved, although the backache and tenderness over the epigastrium and descending colon still continued. The intestinal distention had nearly disappeared. The patient expressed a desire for solid food. As no evacuation of the bowels had occurred during the previous thirty-six hours, an enema of salt water was ordered. This resulted in a large semisolid movement, and was followed, within one-half hour by a severe chill, subsequent to which the patient collapsed and became pulseless. When I again reached the bedside, after an urgent call by telephone, the patient was bathed in a cold perspiration; pulse about 136, feeble, but regular. The mind was clear, though the patient was anxious and momentarily expected death. There was slight dyspnea; excessive thirst; abdominal distention diminished, and tenderness gone. No sharp abdominal pain preceded the chill. The morbid picture presented vividly reminded me of several experiences which I had while an interne in the Boston Lying-In Hospital, when I observed septic patients, after the uterus had been irrigated and curetted, who were seized with violent chills and subsequent collapse.

The stool, following the enema, had been carefully examined by the patient's husband, and in it a piece of lobster, apparently not much altered by its passage through the alimentary canal, was found. The portion of lobster must have remained in the canal just one week. The patient gradually rallied during the night, the pulse and temperature becoming normal. During the week following there was extreme prostration, and from four to six liquid stools daily, containing much mucus but no blood. The urine was turbid during the three or four days following the crisis, blood or albumin not being present. At the present time the patient is up and about.

In reaching a diagnosis three diseases were considered; *viz.*, appendicitis, subacute gastro-intestinal catarrh, and typhoid fever. The first, though strongly indicated by the emesis and rapid pulse, was considered improbable; for the local manifestations were slight as compared with the subjective symptoms. The patient being an adult, the symptoms seemed too grave to be attributed to a simple gastro-intestinal catarrh. The history was rather short for typhoid fever; yet it was most favored in making a diagnosis. The positive reaction to the Widal test seemed conclusive. The crisis, however, and the subsequent course of the illness necessitated a radical change in conclusions. At one time I was forced to consider the possibility of an intestinal perforation following an appendical inflammation. I was glad to conclude that such could not have been the case; as, following the collapse, the patient's condition gradually improved. It seemed to me, therefore, that the illness was due to the ingestion of lobster, the toxins of which had been absorbed, and that the violent crisis was the result either of poisoning by naphthol or of the absorption of a large quantity of

¹ Read at a Stated Meeting of the Harvard Medical Society of New York, held October 23, 1897.

ptomains at one time. The patient received in all thirty-five grains of naphthol, four doses of which had been taken the preceding day, and, if she had been particularly susceptible to the drug it seems as though the symptoms of poisoning would have been manifested at that time. Larger doses have been administered over much longer periods without ill effect. It is, therefore, safe to conclude that the amount of the drug received by the patient was not the cause of the symptoms. Further, the urine did not display evidences of naphthol poisoning. As a final resource ptomain poisoning remains. To this the patient, owing to the temporarily depressed condition of health, was peculiarly susceptible. Symptoms resembling those presented in this case have been observed in other instances subsequent to the ingestion of lobster. The severe chill and prostration were apparently due to the overwhelming discharge of poison into the system. The reaction to the Widal test lends, in my opinion, additional confirmation to this diagnosis; as Aresdarnoro, quoted by Vaughan and Novy, in eleven cases of salmon and sturgeon poisoning, detected in the livers, spleens, and kidneys of the fish, and also in the same organs of those who ate of them, bacilli resembling, but not identical with, typhoid bacilli. Did not such bacilli give the typhoid reaction with Widal's test, and produce the ptomains which, apparently, poisoned may patient?

AN ADDRESS.

INTERNAL MEDICINE AS A VOCATION.¹

By WILLIAM OSLER, M.D.,
OF BALTIMORE;

PROFESSOR OF MEDICINE IN JOHNS HOPKINS UNIVERSITY.

It was with the greatest pleasure that I accepted an invitation to say a few words before this section of the Academy on the importance of internal medicine as a vocation. I wish there were another term to designate the wide field of medical practice which remains after the separation of surgery, midwifery, and gynecology. In itself it is not a specialty, but embraces at least half a dozen, and so its cultivators cannot be called specialists, but bear without reproach the good old name physician, in contradistinction to general practitioners, surgeons, obstetricians, and gynecologists. I have heard the fear expressed that in this country the sphere of the physician proper is becoming more and more restricted, and perhaps this is true, but I maintain (and I hope to convince you) that the opportunities are still great, and that the harvest is truly plenteous, while the laborers, though not few, are scarcely sufficient to meet the demand.

At the outset I would like to emphasize the fact that the student of internal medicine cannot be a specialist. The manifestations of almost any one of the important diseases in the course of a few years will "box the compass" of the specialties. Typhoid fever, for example, will not only go the rounds of those embraced in medicine

proper, but will carry its student far afield in morbid psychology, and sometimes teach him, perhaps at the cost of the patient, a little surgery. So, too, with syphilis, which after the first few weeks I claim as a medical affection. I often tell my students that it is the only disease which they require to study thoroughly. Know syphilis in all its manifestations and relations, and what remains to be learned will not stretch the pia mater of a megaloccephalic senior student.

Each generation has to grow its own consultants. Hosack, Samuel Mitchell, Swett, Alonzo Clark, Austin Flint, Fordyce Barker, and Alfred Loomis served their day in this city, and then passed on into silence. Their works remain; but enough of a great physician's experience dies with him to justify the saying "there is no wisdom in the grave." The author of "Rab and His Friends" has a couple of paragraphs on this point which are worth quoting: "Much that made such a man what the community, to their highest profit, found him to be, dies with him. His inborn gifts, and much of what was most valuable in his experience, were necessarily incommunicable to others; this depending much on his forgetting the process by which, in particular cases, he made up his mind, and its minute successive steps . . ., but mainly, we believe, because no man can explain directly to another man *how* he does any one practical thing, the doing of which he himself has accomplished not at once or by imitation, or by teaching, but by repeated personal trials, by missing much before ultimately hitting."

Wherewithal shall a young man prepare himself, should the ambition arise in him to follow in the footsteps of such a teacher as, let us say, the late Austin Flint—the young man just starting, and who will from 1915 to 1940 stand in relation to the profession of this city and this country as did Dr. Flint between 1861 and the time of his death. We will assume that he starts with equivalent advantages, though this is taking a great deal for granted, since Austin Flint had a strong hereditary bias toward medicine, and early in life fell under the influence of remarkable men whose teachings molded his thought to the very end. We must not forget that Dr. Flint was a New Englander, and of the same type of mind as his great teachers—James Jackson and Jacob Bigelow.

Our future consultant has just left the hospital, where, for the first time, realizing the possibilities of his profession, he has had his ambition fired. Shall he go abroad? It is not necessary. The man whom we have chosen as his exemplar did not, but found his opportunities in country practice, and in Buffalo and Louisville, then frontier towns, and had a national reputation before he reached New York. But would it be useful to him? Undoubtedly. He will have a broader foundation on which to build, and a year or two in the laboratories and clinics of the great European cities will be most helpful. To walk the wards of Guy's or St. Bartholomew's, to see the work at the St. Louis and at the Salpêtrière, to have put in a few quiet months of study at one of the German university towns will store the young man's mind with priceless treasures. I assume that he has a mind. I am not heedless of the truth of Shakespeare's sharp taunt,

¹ Read before the Section on General Medicine of the New York Academy of Medicine, October 19, 1897.

How much the fool that hath been sent to Rome
Exceeds the fool that hath been kept at home.

At any rate, whether he goes abroad or not, let him early escape from the besetting sin of the young physician, *Chauvinism*, that intolerant attitude of mind which brooks no regard for anything outside his own circle and his own school. If he cannot go abroad let him spend part of his short vacations in seeing how it fares with the brethren in his own country. Even a New Yorker could learn something in the Massachusetts General and the Boston City Hospital. A trip to Philadelphia would be most helpful; there is much to stimulate the mind at the old Pennsylvania Hospital and at the University, and he would be none the worse for a few weeks spent still farther south on the banks of the Chesapeake. The all-important matter is to get breadth of view as early as possible and this is difficult without travel.

Poll the successful consulting physicians of this country to-day, and you will find they have been evolved either from general practice or from laboratory and clinical work; many of the most prominent having risen from the ranks of general practitioners. I once heard an eminent consultant rise in wrath because some one had made a remark reflecting upon this class. He declared that no single part of his professional experience had been of such value. But I wish to speak here of the training of men who start with the object of becoming pure physicians. From the vantage ground of more than forty years of hard work, Sir Andrew Clark told me that he had striven ten years for bread, ten years for bread and butter, and twenty years for cakes and ale; and this is really a very good partition of the life of the student of internal medicine, of some at least, since all do not reach the last stage.

It is high time we had our young Lydgate started.¹ If he has shown any signs of *nous* during his student and hospital days a dispensary assistantship should be available; anything should be acceptable which brings him into contact with patients. By all means, if possible, let him be a pluralist, and—as he values his future life—let him not get early entangled in the meshes of specialism. Once established as a clinical assistant he can begin his education, and nowadays this is a very complicated matter. There are three lines of work which he may follow, all of the most intense interest, all of the greatest value to him—chemistry, physiology, and morbid anatomy. Professional chemists look askance at physiological chemistry, and physiological chemists criticize pretty sharply the work of some clinical chemists, but there can be no doubt of the value to the physician of a very thorough training in methods and ways of organic chemistry. We sorely want, in this country, men of this line of training, and the outlook for them has never before been so bright. If at the start he has not had a good chemical training, the other lines should be more closely followed.

Physiology, which for him will mean very largely experimental therapeutics and experimental pathology, will open a wider view and render possible a deeper grasp of

the problems of disease. To Traube and men of his stamp, the physiological clinicians, this generation owes much more than to the chemical or *post-mortem*-room group. The training is more difficult to get, and nowadays when physiology is cultivated as a specialty few physicians will graduate into clinical medicine directly from the laboratory. On the other hand, the opportunities for work are now more numerous, and the training which a young fellow gets in a laboratory controlled by a pure physiologist will help to give that scientific impress, which is only enduring when early received. A thorough chemical training and a complete equipment in methods of experimental research are less often met with in the clinical physician than a good practical knowledge of morbid anatomy, and, if our prospective consultant has to limit his work, chemistry and physiology should yield to the claims of the dead-house. In this dry-bread period he should see autopsies daily, if possible. Successful knowledge of the infinite variations of disease can only be obtained by a prolonged study of morbid anatomy. Of special value in training the physician in diagnosis, it also enables him to correct his mistakes, and, if he reads its lessons aright, it may serve to keep him humble.

This is, of course, a very full program, but in ten years a bright man with what Sydenham calls "the ancient and serious diligence of Hippocrates" will pick up a very fair education, and will be fit to pass from the dispensary to the wards. If he cannot go abroad after his hospital term, let it be an incentive to save money, and with the first \$600 let him take a summer semester in Germany, working quietly at one of the smaller places. Another year spend three months or longer in Paris. Lay schemes in advance, and it is surprising how often the circumstances fit in with them. How shall he live meanwhile? On crumbs—on pickings obtained from men in the cakes-and-ale stage (who always can put paying work into the hands of young men), and on fees from classes, journal work, private instruction, and from work in the schools. Any sort of medical practice should be taken, but with caution—too much of it early may prove a good man's ruin. He cannot expect to do more than just eke out a living. He must put his emotions on ice; there must be no "Amaryllis in the shade," and he must beware the tangles of "Neæra's hair." Success during the first ten years means endurance and perseverance; all things come to him who has learned to labor and wait, who bides his time "ohne hast, aber ohne rast," whose talent develops "in der Stille," in the quiet fruitful years of unselfish devoted work. A few words in addition about this dry-bread decade. He should stick closely to the dispensaries. A first-class reputation may be built up in them. Bryon Bramwell's "Atlas of Medicine" largely represents his work while an assistant physician to the Royal Infirmary, Edinburgh. Many of the best-known men in London serve ten, fifteen, or even twenty years in the out-patient departments before getting wards. Lauder Brunton has only recently obtained his full physicianship at St. Bartholomew's after a service of more than twenty years in the out-patient department. During this period let him not lose the substance of ultimate success in grasping at

¹ This well-drawn character in George Eliot's "Middlemarch" may be studied with advantage by the physician; one of the most important lessons to be gathered from it is—marry the right woman!

the shadow of present opportunity. Time is now his money, and he must not barter away too much of it in profitless work—profitless so far as his education is concerned, though it may mean ready cash. Too many quiz classes or too much journal work has ruined many a promising clinical physician. While the Pythagorean silence of nearly seven years, which the great Louis followed (and broke to burst into a full-blown reputation) cannot be enjoined, the young physician should be careful what and how he writes. Let him take heed to his education, and his reputation will take care of itself, and in a development under the guidance of seniors he will find plenty of material for papers before medical societies and for publication in scientific journals.

I would like to add here a few words on the question of clinical instruction, as with the great prospective increase of it in our schools there will be many chances of employment for young physicians who wish to follow medicine proper as a vocation. To-day this serious problem confronts the professors in many of our schools—how to teach practical medicine to the large classes; how to give them protracted and systematic ward instruction? I know of no teacher in the country who controls enough clinical material for the instruction of classes of say 200 men during the third and fourth years. It seems to me there are two plans open to the schools: The first is to utilize dispensaries for clinical instruction much more than at present is the rule. For this purpose a teaching-room for a class of twenty-five or thirty students immediately adjoining the dispensary is essential. For instruction in physical diagnosis, for the objective teaching of disease, and for the instruction of students in the use of their senses, such an arrangement is invaluable; and there are hundreds of dispensaries in which this plan is feasible, and in which the material now is not properly worked up because of the lack of this very stimulus. In the second place I feel sure, that ultimately, we shall develop a system of extramural teaching similar to that which has been so successful in Edinburgh; and this will give employment to a large number of the younger men. At any large university school of medicine there might be four or five extramural teachers of medicine, selected from men who could prove that they were fully qualified to teach and that they had a sufficient number of beds at their command, with proper equipment for clinical work. At Edinburgh there are eight extramural teachers of medicine whose courses qualify the student to present himself for examination either before the Royal Colleges or the University. If we ever are to give our third and fourth year students protracted and complete courses in physical diagnosis and clinical medicine, extending throughout the session, and not in classes of a brief period of six-week's duration, I am confident that the number of men engaged in teaching must be greatly increased.

Ten-years' hard work tells with colleagues and friends in the profession, and with enlarged clinical facilities the physician enters upon the second, or bread-and-butter period. This, to most men, is the great trial, since the risks are greater, and many now drop out of the race,

wearied at the length of the way and drift into specialism or general practice. The physician develops more slowly than the surgeon, and success comes later. There are surgeons at forty years in full practice and at the very top of the wave, a time at which the physician is only preparing to reap the harvest of years of patient toil. The surgeon must have hands, and better, young hands. He should have a head, too, but this does not seem so essential to success, and he cannot have an old head with young hands. At the end of twenty years, when about forty-five, our Lydgate should have a first-class reputation in the profession, and a large circle of friends and students. He will probably have precious little capital in the bank, but a very large accumulation of interest-bearing funds in his brain-pan. He has gathered a stock of special knowledge which his friends in the profession appreciate, and they begin to seek his counsel in doubtful cases, and gradually learn to lean upon him in times of trial. He may awake some day, perhaps, quite suddenly, to find that twenty years of quiet work, done for the love of it, has a very solid value.

The environment of a large city is not necessary to the growth of a good clinical physician. Even in small towns a man can, if he has it in him, become well versed in methods of work, and with the assistance of an occasional visit to some medical center he can become an expert diagnostician and reach a position of dignity and worth in the community in which he lives. I wish to plead particularly for the wasted opportunities in the smaller hospitals of our large cities, and in those of more moderate size. There are in this State a score or more of hospitals with from thirty to fifty medical beds, offering splendid material for good men on which to build reputations. Take for example, the town of Thelma, which I know well, to which young Rondibilis, a recent resident at the Hôtel Dieu, has just gone. He wrote asking me for a letter of advice, from which I take the liberty of extracting one or two paragraphs:

"Your training warrants a high aim. Say to those who ask, that you intend to practice medicine only, and will not take surgical or midwifery cases. X. has promised that you may help in the dispensary, and as you can count blood and percuss a chest you will be useful to him in the wards, which, by the way, he now rarely visits. Be careful with the house physicians, and if you teach them anything do it gently, and never crow when you are right. The crow of the young rooster before his spurs are on always jars and antagonizes. Get your own little clinical laboratory in order. Old Dr. Rolando will be sure to visit you, and bear with him as he tells you how he can tell casts from the ascending limb of the loop of Henle. He was once as you are now, a modern, but he crawled up the bank twenty years ago; the stream has left him there, but he does not know it. He means to impress you; be civil and show him the new Nissle-stain preparations, and you will have him as a warm friend. His good heart has kept him with a large general practice, and he can throw *post-mortems* in your way, and may send for you to sit up with his rich patients. If Y. asks you to help in the teaching, jump at the chance.

The school is not what you might wish, but the men are in earnest, and a clinical microscopy-class or a voluntary ward-class, with Y's. cases, will put you on the first rung of the ladder. Yes, join both the city and the county society, and never miss a meeting. Keep your mouth shut too, for a few years, particularly in discussions.

"Foote's (Philadelphia) is the catalogue to which I referred. Let the old men read new books; you read the journals and the old books. Study Lænnec this winter; Forbes' 'Translation' can be cheaply obtained, but it will help to keep up your French to read it in the original. The old Sydenham Society editions of the Greek writers and of Sydenham are easily got and are really very helpful. As a teacher you can never get *orientiert* without a knowledge of the Fathers, ancient and modern. And do not forget, above all things, the famous advice to Backmore, to whom, when he first began the study of physic, and asked what books he should read, Sydenham replied, 'Don Quixote,' meaning thereby, as I take it, that the only book of physic suitable for permanent reading is the book of Nature."

A young fellow with staying powers who avoids entanglements, may look forward in twenty years to a good consultation practice in any town of 40,000 to 50,000 inhabitants. Some such man, perhaps, in a town far distant, taking care of his education, and not of his audience, may be the Austin Flint of New York in 1930.

"Many are called, but few are chosen," and of the many who start out with high aims, few see the goal. Even when reached the final period of "cakes and ale" has serious drawbacks. There are two groups of consultants, the intra- and the extraprofessional; the one gets work through his colleagues, the other, having outgrown the narrow limits of professional reputation, is at the mercy of the *profanum vulgus*. Then for him "farewell the tranquil mind, farewell content." His life becomes an incessant struggle, and between the attempt to carry on an exhausting and irksome practice, and to keep abreast with young fellows still in the bread-and-butter stage, the consultant at this period is worthy of our sincerest sympathy.

One thing may save him. It was the wish of Walter Savage Landor always to walk with Epicurus on the right hand and Epictetus on the left, and I would urge the clinical physician, as he travels farther from the East, to look well to his companions—to see that they are not of his own age and generation. He must walk with the "boys," else he is lost, irrevocably lost; not all at once, but by easy grades, and every one perceives his ruin before he, "good, easy man," is aware of it. I would not have him a basil plant, to feed on the brains of the bright young fellows who follow the great wheel uphill, but to keep his mind receptive, plastic, and impressionable he must travel with the men who are doing the work of the world, the men between the ages of twenty-five and forty.

In the life of every successful physician there comes the temptation to toy with the Delilah of the press—daily and otherwise. There are times when she may be courted with satisfaction, but beware! sooner or later she

is sure to play the harlot, and has left many a man shorn of his strength, *viz.*, the confidence of his professional brethren. Not altogether with justice have some notable members labored under the accusation of pandering too much to the public. When a man reaches the climacteric, and has long passed beyond the professional stage of his reputation, we who are still "in the ring" must exercise a good deal of charity, and discount largely the *on dits* which indiscreet friends circulate. It cannot be denied that in dealings with the public just a little touch of humbug is immensely effective, but it is not necessary. In a large city there were three eminent consultants of world-wide reputation; one was said to be a good physician but no humbug, the second was no physician but a great humbug, the third was a great physician and a great humbug. The first achieved the greatest success, professional and social, possibly not financial.

While living laborious days, happy in his work, happy in the growing recognition which he is receiving from his colleagues, no shadow of doubt haunts the mind of the young physician, other than the fear of failure; but I warn him to cherish the days of his freedom, the days when he can follow his bent, untrammelled, undisturbed, and not as yet in the coils of the octopus. In a play of Oscar Wilde's one of the characters remarks, "there are only two great tragedies in life, not getting what you want—and getting it;" and I have known consultants whose treadmill life illustrated the bitterness of this *mot*, and whose great success at sixty did not bring the comfort they had anticipated at forty. The mournful echo of the words of the preacher rings in their ears, words which I not long ago heard quoted with deep feeling by a distinguished physician, "Better is a handful with quietness than both hands full with travail and vexation of spirit."

THERAPEUTIC NOTES.

Treatment of Large Effusions into the Knee-Joint.—DÜMS (Centralbl. für Chir., September 18, 1897) recommends an active therapy for tense effusions into the knee-joint, either by puncture or incision. Although massage, compression, etc., will in time cause the disappearance of the fluid, yet in the meantime the joint-capsule has been so long stretched that a return of the affection is probable? Even when the fluid is promptly removed from the joint there is still danger of a recurrence, and the limb should be protected from strain for some time by being very gradually brought again into service. Dums' plan of treatment is as follows: As soon as the fluid is removed, a firm bandage is applied, and the limb fixed in an immovable apparatus in an extended position. At the end of a week the bandage is removed, a few passive motions made, and a starch bandage applied. One week later the patient may go about on crutches. From this time on a gradually increasing amount of passive and active motion is allowed, and at the end of six or eight weeks a complete cure may be expected. This treatment appears tedious, but the relapses are fewer than those which follow the ordinary methods.

Atony of the Rectum.—ACHESON (*Quart. Jour. of Rect. and Gastro-int. Dis.*, October, 1897) says that atony of the rectum is a result of constipation, a sedentary life, disregard of Nature's calls, or the continued use and abuse of large enemata of cold, or, still worse, warm or hot water. The subjective symptoms of fulness in the rectum with impossibilities of evacuation, and often a faintness when it has been emptied, are well known. For treatment are mentioned course foods, exercise, bathing, draughts of hot water, regular massage, and the removal of the cause. Purgatives as a routine are not recommended. The following nervomuscular tonic is serviceable:

R	Aloin	.	.	.	.	.	gr. ii
	Strychnin	.	.	.	.	.	gr. $\frac{1}{60}$
	Ext. belladon	.	.	.	.	.	gr. $\frac{1}{8}$
	Ipecac.	.	.	.	.	.	gr. $\frac{1}{2}$

M. Ft. pil. Sig. One pill night and morning.

Small injections of cold water, small injections of glycerin, or a glycerin suppository may be used; or the following mixture may be injected:

R	Rhatan	.	.	.	.	.	ii
	Rect. spts.	.	.	.	.	.	ii
	Water	.	.	.	.	.	ii.

M.

It may be necessary to empty the distended rectum mechanically, and afterward to employ an antiseptic douche.

A New Method of Treatment of the Umbilical Cord.—

PEAUDECERF (*Rev. de Therapeut.*, September 1, 1897) describes a procedure recommended by Bar, which consists in the application of a small pair of clamps to the umbilical cord in place of a ligature. The clamp is placed squarely across the cord as close as possible to the abdominal surface. The cord is cut off next to the clamp and a light dressing applied beneath and above the instrument. On the following day the clamp is removed, and the portion of the cord which was compressed in its jaws is cut away. A small sterilized dressing is applied which does not require changing until the fifth day, when the fragment of the cord remaining will be found dry and already separated from the body. A bath is not given until cicatrization is complete.

Effect of Urotropin upon Cystitis.—NICOLAIER (*Der Arzt. Prakt.*, No. 12, 1897) has been using for two years a combination of ammonia and formalin, called urotropin, in the treatment of uric-acid concretions, and bacterial diseases of the urinary passages. He has been especially pleased with its effect in cases of cystitis accompanied by ammoniac fermentation of the urine. The daily dose should not exceed 20 grains, as larger amounts, especially if continued for some time, are likely to cause some burning in the neck of the bladder and urethra, and frequency of micturition. From 5 to 8 grains dissolved in a glass of water and taken after meals, will rapidly change the character of an ammoniac urine, and after two or three days it is not necessary to administer the drug more than twice daily. Gastric symptoms do not occur even if

the administration is continued for months. The first effect of the remedy is to diminish the intensity of the ammoniac odor of the freshly voided urine. Then the reaction of the urine quickly becomes acid. The urine once more becomes clear, the crystals of triple phosphate, and ammonium urate disappear, pus diminishes, and the associated symptoms vanish. Experiment proves that urotropin does not kill the germs which cause the ammoniac fermentation, but merely prevents their development. This statement is borne out by the clinical fact that if the drug is discontinued, the fermentation reappears after a short interval. If taken for some weeks or months, however, there may be no recurrence of the fermentation when its administration is abandoned.

Massage in Chorea.—FEDOROV (*La Semaine Méd.*, September 8, 1897) is well pleased with the results obtained in ten cases of chorea by the use of massage. The patients were children from seven to fourteen years of age. The movements were at first light, then gradually increased in force until the whole body was thoroughly handled. Passive motions followed as soon as the patients were sufficiently calmed to permit them. The beneficial effects of this treatment were evident on the third or fourth day, and at the end of a week an improvement in the general condition was manifest. Fedorov believes that the massage exerts a sedative action on the central nervous system, stimulates the circulation, and so facilitates nutritive exchange, and the elimination of toxins which have accumulated in the organisms.

Treatment of Soft Chancre by Prolonged Irrigation.—Two Italian physicians, MALUSARDI and BONADUCI (*La Semaine Méd.*, September 8, 1897), have been treating venereal ulcers with prolonged irrigations of hot water at a temperature of from 47° to 52° C. (108°–117° F.). The irrigations are commenced at the former temperature, which is then rapidly raised by heating the irrigator with an alcohol lamp, or more simply, by the addition of some boiling water to that in the irrigator. The irrigation should be interrupted from time to time to give the patient a chance to rest, and the whole *séance* lasting a half-hour, should be repeated daily. Under the influence of the heat, the ulcer becomes very red in a few minutes, and there is a sensation of heat all over the body, accompanied oftentimes by profuse perspiration. The ulcer is finally dusted with iodol powder, and a light dressing of absorbent cotton applied. This method causes the induration on the border of the ulcer to rapidly disappear, and transforms it into a simply wound which heels readily. In the forty-one cases in which the writers employed this plan of treatment from two to eleven irrigations were all that were necessary.

Normal Blood as a Hemostatic in Hemophilia.—BIENWALD (*Wien. Med. Blät.*, July 15, 1897) has found that the application of blood obtained by aspiration from a healthy person will stop the bleeding in a hemophiliac, if brought into contact with the wound. He explains this action by saying that the normal blood contains the necessary ferment to produce thrombi in the capillaries.

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THE MEDICAL NEWS AND THE CHARITIES COMMISSIONERS.

THE MEDICAL NEWS has scored another triumph in correcting abuses in the Department of Public Charities of New York City. The exposure in our columns of the disgraceful exploitation of a "drink cure" in Bellevue Hospital during the summer of 1896 resulted, after bringing the Commissioners to a realization of their insulting action, in routing an intolerable invasion of quackery. This was accomplished only after a most persistent fight. The principle, however, was permanently established that in the management of the medical and surgical affairs of the hospital the best and only safe guide is inherent in the profession itself.

The present triumph to which we allude consists in restoring to the profession, as represented by the Medical Board of Bellevue Hospital, the power to nominate appointees to fill vacancies in the visiting staff as they occur from time to time. In a recent editorial (THE MEDICAL NEWS, October 30, 1897) we said: "In anticipation of such a result (the domination of hospital appointments by political influence), we respectfully call upon the

Board of Charities Commissioners of the City of New York to reconsider its action and restore the just and equitable mode of accession to the visiting staffs of the various city hospitals." The response has come promptly and definitely, as indicated by the following letter, which has been received by the secretary of the Medical Board of Bellevue Hospital:

"DEAR SIR: By direction of the Board I have to inform you that the resolution of September 25, 1897, has been rescinded, and paragraph 3 of the organization of the Medical Board of Bellevue Hospital, dated May 12, 1882, which provided that appointments to fill vacancies shall be made by the colleges or Fourth Division is restored to full force and effect as it was prior to the resolution of September 25th.

"A. G. WEAVER,
"Secretary of the Board of Commissioners."

THE RIGHT OF FREE SPEECH.

A CASE of interest and importance to medical men has recently been decided in the United States Court at New York City, in which a New York optician brought suit for libel against Dr. Frank Van Fleet demanding damages to the amount of \$40,000. The facts in the case are briefly as follows: The plaintiff had an advertisement in the directory published by the County Medical Society of New York, in the course of which these words were used: "Headache and neuralgia often proceed from latent defects of the eyes, and especially in cases of muscular asthenopia. If present, these defects are detected by our method of testing. Proper glasses give permanent relief, and physicians can have a report on the state of any patient he desires."

At a regular meeting of the Society, Dr. Van Fleet protested against this advertisement, as its insertion was sought for the ensuing year, on the ground that printing such advertisements in the official publication of the Society led the public to believe that its appearance there was equivalent to the Society's endorsement. He went on to say that "anybody, not a physician, who undertook to cure headache or neuralgia with glasses or anything else and accepted remuneration therefore, violated the medical laws of the State and was a quack; that the Society would not allow him to advertise in that way and it should not allow any one else to do so." It so happened that his words

found their way into the public press, and the optician sued him as above.

In answer, Dr. Van Fleet pleaded the truth of his spoken words and the protection of the Court, because of the circumstances under which the remarks were made. In this the County Society not only sustained him but agreed to bear the principal cost of the suit. The optician being an alien, a British subject, the action was brought in the United States Court, Judge Wallace presiding. The theory upon which the defense proceeded was that every person has a right to seek redress before a proper tribunal in a proper manner, and that language used upon the occasion of seeking redress is privileged. Dr. Van Fleet was supported in his position by Drs. Landon Carter Gray, Andrew H. Smith, and D. B. St. John Roosa.

At the close of the case the counsel for the defendant insisted upon his motion to dismiss the complaint and for a direction of the verdict, and Judge Wallace said in effect, that since the defendant had brought forward such eminent medical authority to sustain his view, he was bound to believe that Dr. Van Fleet had ample ground for believing what he had said to be true even if the evidence did not justify him (the defendant) in finding that it was true, and that it was, therefore, his duty to direct a verdict, because if the jury should find a verdict for the plaintiff he would be obliged, under the circumstances, to set it aside.

Naturally this verdict is extremely gratifying on every account, for it settles once and for all that a member of the Medical Society of the County of New York has a right to attend the meetings and speak as his sense of duty to the public dictates without fear of suits for libel. The Medical Society itself showed its gratification by a vote of thanks to Dr. Van Fleet for the plucky fight he had made.

INTERNAL MEDICINE AS A VOCATION.

THE recent address by Professor Osler on the above subject, at the New York Academy of Medicine, which we publish to-day, offers much material for reflection. It is in brief the essence of the ratiocination, the conviction, and the anticipation of one who graces the vocation concerning which he discoursed so felicitously. As the result of much thought we have his modern Lydgate; of his con-

viction, we have an expression of his belief in the evils of early specialism; and of his hope, his scheme for enlarging the field of medical teaching.

If we do not coincide with him as to the disciplinary and preparatory years of his exemplar, it is perhaps because we construe the title of his address more literally than he, and do not use the terms Consulting Diagnostician as interchangeable with General Practitioner. The plan of training which Dr. Osler has outlined in such detail will undoubtedly facilitate the development of the former, but we are not all convinced that it will develop the highest or most useful type of the latter. In the first place, the ideal Esculapian, who spends the larger part of the first ten years of his professional life in the dispensary and the dead-house, sees very little, if any, acute disease. He is allowed to take a case of typhoid fever, or pneumonia, now and then, if they come with the "crumbs," alluded to by the speaker, but he is admonished that they lie on deflected courses between him and his goal, and it is not absolutely necessary to include them in order to reach the latter in the possession of full vigor.

Naturally, Dr. Osler does not intend that his model shall not have experience with acute diseases, he anticipates that this will be forthcoming with the transition which shall carry him from the dispensary "to hospital wards," but here he reckons with conditions which do not exist, at least for the city of New York with which we are most familiar. Those who hold hospital appointments, as well as aspirants for such appointments, are painfully aware that there is practically no "reward-of-merit" system in the hospitals of this city, and the dispensaries connected therewith. Let us take for instance, three of our largest hospitals, representing three different "social grades": Bellevue Hospital, Mt. Sinai Hospital, and New York Hospital, and inquire what proportion of the constituents of their respective staffs served in the dispensaries of these hospitals, and received their appointment as a reward for faithful or brilliant service. We feel sure that we are quite within the mark when we say that less than one-tenth of the entire number were at any time on the dispensary staff. Under such circumstances it would be necessary for our physician, developing along the lines laid down, to "look sharp" or he would find himself well along in the second decade of his pro-

fessional life without any considerable training in the recognition and handling of acute diseases, and without great prospects of getting it.

After all it is with the physician as it is with the mariner. Our admiration is greater for the pilot who can bring a strong, seaworthy craft safely through tempest, storm, and the unavoidable exigencies of the voyage, than for him who guides a weak disabled vessel from one shore to another. And so it is with the physician. He who steps in when the ravages of acute disease are overpowering the vitality and jeopardizing life, and with a little help here, or some guidance there, succeeds in influencing the scales toward Nature's side, is more worthy of our emulation than he who diagnosticates a degenerative disease, and is able to tell to within a few months when it will terminate the patient's life.

To gain this experience and to stand ready with such aid it is necessary that one should from the very beginning become familiar with acute disease and acquaint himself intimately with its every phase and variation. This experience is not to be had in dispensaries, for nine-tenths of all the cases to be observed there are of a chronic nature, and it is the diagnosis of such conditions and incidentally their prevention and treatment that the dispensary physician learns. We are constrained, therefore, to contend that in a vocational sense the general practitioner must needs depart far afield from the restrictions made by our worthy mentor.

The suggestion made by the speaker, that the time is at hand for an extension of facilities for giving practical instruction to medical students, by the adoption of the system which has operated so advantageously in Edinburgh for many years, the so-called extramural system of teaching, must strike every one interested in elevating the standard of recruits to the ranks of the profession as an extremely important one. In this city not more than one-fourth of the large hospitals are utilized for bedside teaching and this because the visiting physicians are not of the faculties of the medical colleges. If Dr. Osler's suggestions were adopted the rich material which these hospitals afford might be utilized for the advantage of the student, while the increased attention which the visiting physicians who essay to conduct courses must need give would redound to the advantage of the patient. There is no denying the fact that to-day

Edinburgh maintains her preeminence as a medical center in Great Britain, and this is largely due to the extramural system of teaching which has been developed there to such a commendable degree. We believe that the reputation and material prosperity of the medical college which first adopts this suggestion of Dr. Osler will be materially enhanced. We respectively commend his suggestion to the serious consideration of the governing bodies of American medical colleges.

ECHOES AND NEWS.

Obituary.—Dr. Charles R. Bourroughs, President of the Mercer County Medical Society, died suddenly on the 10th inst., at his home in Trenton, N. J.

The Philadelphia Medical Club tendered a reception to Dr. Howard A. Kelly of Johns Hopkins Hospital on Friday, November 19, 1897, at the Aldine Hotel, Philadelphia.

The Trachoma Bacillus.—Dr. Leopold Müller of the University of Vienna is said to have discovered the bacillus of the so-called "Egyptian ophthalmia," or trachoma.

Appointment of Dr. Ophuels.—Dr. W. Ophuels of the Pathological Institute of Goettingen, has accepted a call to the chair of Pathology in the University of Missouri.

Plague Attacks Monkeys.—The bubonic plague which is still raging in British India has attacked a colony of monkeys near Hardwar. The local authorities are trapping and isolating the diseased animals.

Lavoisier's Memory to Be Honored.—The Municipal Council of Paris has voted the sum of 3000 francs toward a statue which is to be erected to the memory of the distinguished chemist Lavoisier.

Doctor's Life Worth \$30,000.—A New York Supreme Court jury recently gave a verdict of \$30,000 against the New York, New Haven and Hartford Railroad Company for having caused the death of a doctor.

A Physician Shot while Gunning.—Dr. E. O. Cummins of Jersey City, N. J., was shot and badly injured on the 11th inst., by the accidental discharge of a gun carried by a friend who accompanied him on a hunting-trip.

Addition to St. Vincent's Hospital.—An extension to St. Vincent's Hospital, New York, is to be erected at a cost of \$250,000. It will be devoted exclusively to charity patients. The ambulance service will also be enlarged and improved.

University of Berlin Laboratory.—A new building for the chemical laboratory of the University of Berlin is now being erected at a cost of \$250,000. It will contain four large laboratories, desks for 250 students, and twenty-five research-rooms.

Strange Epidemic in Omaha.—More than 10,000 of the inhabitants of Omaha, Neb., have been suffering during the past three weeks from an unusual skin disease. The affection is not serious, but its etiology remains a mystery.

The Sterilization of Books.—Dr. John S. Billings, who is the director of the New York Public Library, recommends that when the library becomes a circulating one each book upon its return shall be disinfected by formalin before being again issued.

Famine in Archangel.—A terrible famine is ravaging the Province of Archangel, in the extreme north of European Russia, extending from the Ural Mountains on the east to Finland on the west. The province has a population of about 300,000. Many deaths from starvation have occurred.

Ophthalmia in Prussia.—Owing to the fact that ophthalmia is prevalent in East Prussia, the eyes of all school children in Königsberg were recently examined, with the result that thirty-two per cent. were found to be suffering from the disease, and of these more than one-third have trachoma.

Insane Asylum Destroyed by Fire.—The State Lunatic Asylum at Milledgeville, Ga., was totally destroyed by fire on the afternoon of the 9th inst. The thousand patients were gotten out and housed in another building after the most heroic work on the part of the staff and employees, and not a life was lost.

Phrenologist as an Expert.—For the first time in the history of the criminal courts of the State of Missouri, or probably of any State, phrenology had been recognized as a science in determining insanity. On the 13th inst., in a murder trial before Judge Zachritz, a phrenologist was permitted to qualify as an expert and testify as to the insanity of the defendant.

The Lynn Typhoid Epidemic.—The epidemic of typhoid fever at Lynn, England, is still progressing. Up to the 6th inst. there had been 300 cases, and about ten new ones are reported each day. It now appears that a similar epidemic prevailed at this place in 1892, which, like the present one, was traced to the washing of filth into the Gaywood River, from whence the water-supply is obtained.

Strange Surgery.—The medical officer of an English almshouse was recently called to account for having amputated a gangrenous foot by incising the soft parts with an old razor and dividing the bones with a worn-out rusty saw which had been thrown away as useless. The explanation offered was that if proper instruments had been used it would have been necessary to destroy them in order that they might not carry infection.

The New York Medical Journal and the Marine Hospital Service.—The *New York Medical Journal* of November 13, 1897, in commenting upon a recent editorial in the columns of THE MEDICAL NEWS, advocating the enlargement of the power and scope of the Marine Hospital

Service, says: "We are glad to see an editorial on this subject in THE MEDICAL NEWS for October 30th. The stand taken in the article is, we think, perfectly right."

Scarlet-Fever Epidemic at Norwalk.—The epidemic of scarlet fever which appeared at Norwalk, Conn., two weeks ago is still spreading. Nineteen new cases were reported on the 8th inst. All the cases have occurred in families supplied by a certain milkman, who has been arrested by the order of the Board of Health. This milkman is charged with having bought his milk from a farmer whose children were suffering from scarlet fever.

Accident Insurance for Students.—At the University of Heidelberg, all students doing laboratory work, and even those who attend experimental lectures in chemistry or physics, are required to take out an accident insurance policy covering casualties which are liable to occur in such institutions. Students who are unfortunate enough to be entirely disabled are to receive \$500 per annum, with a corresponding allowance for lesser injuries. The premium, however, is low—but two and a half cents for lecture courses per semester.

Obituary.—Dr. Harrison Allen, Emeritus Professor of Comparative Anatomy in the Medical School of the University of Pennsylvania, died suddenly on the 14th inst. of heart disease. Dr. Allen was born at Philadelphia in 1841. He was graduated from the University of Pennsylvania in 1861, and soon after entered the regular army. In 1865, when only twenty-four years of age, he was called to the chair of Comparative Anatomy and Zoology in the Medical School of the University of Pennsylvania, which position he held until 1895.

Damages Allowed for Prenatal Injuries.—The *Journal of the American Medical Association*, in its issue of November 13, 1897, mentions a very interesting decision which was recently given by Judge Chetlain in the Superior Court of Cook County, Illinois. The question was whether a child after it is born has a right of action for injuries sustained by it *en ventre sa mere* (in utero), and the judge held that there was a good cause of action stated in the case in question. Suit was brought for the child against a person who conducts a lying-in hospital, for injuries received by the plaintiff *in utero*, while it and its mother were going to the lying-in chamber.

The Typhoid Epidemic at Ligoniel.—The cause of the typhoid-fever epidemic at Ligoniel, near Belfast, Ireland, has been traced to an impure water-supply. In this instance the water rises out of limestone rock, from which it is piped into a large underground reservoir. In the reservoir there is a manhole, level with the adjacent ground, and not water-tight. Consequently, surface water from higher ground after a storm can enter the reservoir. It was discovered that in the same field with the latter was a house in which two persons were suffering from typhoid, and that the excreta had been thrown at the side and back of the house—about 120 yards from the reservoir.

Smallpox and Vaccination in Japan.—In 1870-71 Japan was visited by a terrible epidemic of smallpox, which made great ravages in Yokohama and in the small villages to such an extent that there were no well people to attend the sick. At that time every person who wished to be vaccinated was obliged to pay a small tax to the Government—a quarter of a *bu*, which is equal to nine cents of our money. Vaccination was made compulsory in 1876. This rapid stride is said to be largely due to the fact that pock-marked foreigners were rarely seen in Japan, whereas there was probably not one in a hundred of the adult population of Japan who had not had smallpox.

A Question of Priority.—According to the *British Medical Journal*, a medical lawsuit turning on a question of priority has attracted much attention in Berlin. Some time ago Dr. Casper demonstrated a cystoscope to the Berlin Medical Society as an idea of his own. Dr. Nitze claimed that he had previously constructed and exhibited an apparatus similar in principle and intended for a similar purpose, and alleged that he had shown and explained his instrument to Dr. Casper at the time. Many experts were called, among others being Professors Von Bergmann, Hahn, Wolf, and Posner, and, as is the custom of experts, their testimony was very contradictory. A verdict was finally given to Dr. Casper, and Dr. Nitze was fined.

The "Six-Penny Doctor."—Complaint is made in England against the "six-penny doctor," so-called because he accepts small fees from those who are unable to pay large ones. It is a question, says *The Medical Press*, whether he deserves the condemnation which is heaped upon him by members of his own profession. His patients undoubtedly belong to the great army of the poor who usually seek medical and surgical aid at dispensaries and the out-departments of hospitals, and who, in order to save the time spent in waiting their turn at these places, prefer to pay their six-pence, all which they can afford, perhaps, to consult a man who is willing and ready to attend to them. In this way he is certainly a benefit to the poor, and it can hardly be said that he injures the practice of his brother medical men whose patients are of a wealthier class.

National Board of Health Desired in England.—At a recent meeting of the Sanitary Inspectors' Association at Birmingham, England, a resolution was passed in favor of the establishment of a National Board of Health, its president to have a seat in the Cabinet. In commenting upon this, *The Medical Press and Circular* (Eng.) says that there is no doubt that a department of Public Health is much needed in England, and that, although the idea of having a Minister of Health is not new, the sanitary inspectors have done well to bring the matter again to public notice. The duties which should belong to a department of public health are at present undertaken by the Local Government Board. In pointing out the urgent need of such a department, the typhoid epidemic at Maidstone is referred to and the opinion expressed that

with a department of National Health in full working order, such an alarming epidemic could scarcely occur.

Health Reports.—Statistics of the United States Marine Hospital Service during the week ending November 13, 1897:

YELLOW FEVER—UNITED STATES.

	Cases.	Deaths.
Flomaton, Ala.....To November 3.....	65	..
Greensboro, ".....November 2.....	1	1
Mobile, ".....November 6-12.....	29	6
Montgomery, ".....November 6-10.....	5	1
Selma, ".....November 10.....	1	0
Whistler, ".....November 6-12.....	16	2
Baton Rouge, La.....November 11.....	1	..
New Orleans, ".....November 6-12.....	84	36
Biloxi, Miss.....November 5-11.....	11	1
Clinton, ".....November 12.....	2	..
Edwards, ".....November 8 and 12.....	6	..
Pascagoula, ".....November 8 and 10.....	1	..
Scranton, ".....November 8 and 10.....	4	1
Memphis, Tenn.....November 4-7.....	5	3

YELLOW FEVER—FOREIGN.

Guantanamo, Cuba...September 1-30.....	0	1
Matanzas ".....October 20-November 3.....	0	5
Sagua la Grande, ".....October 23-30.....	49	2
Buff Bay, Jamaica.....October 16-23.....	1	1
Kingston, ".....July 23-October 23.....	56	25
Manchester, ".....July 23-October 23.....	9	3
Port Antonio, ".....July 23-October 23.....	4	4
St. Elizabeth, ".....July 23-October 23.....	1	1
Leon, Nicaragua.....October 1.....	0	2
Cape Haytien, Porto Rico.....November 6.....	..	..

SMALLPOX—FOREIGN.

Prague, Bohemia.....October 16-23.....	1	..
Hong Kong, China.....September 27-October 2.....	1	1
Sagua la Grande, Cuba...October 23-30.....	46	1
Fukushima Ken, Japan..October 1-12.....	4	1
Kagoshima Ken, ".....October 1-10.....	1	1
Miyagi Ken, ".....October 1-10.....	2	..
Nagasaki Ken, ".....October 1-10.....	0	1
The Hokkaido, ".....October 1-10.....	7	5
Edinburgh, Scotland.....October 16-23.....	0	1
Glasgow, ".....October 16-23.....	4	..
Cartagena, U.S. of Colom- bia.....October 5-12.....	7	3

CHOLERA—FOREIGN.

Madras, India.....September 25-October 1.....	0	3
Tokio Fu, Japan.....October 1-10.....	3	..

Corner-Stone Laid at Bellevue.—The corner-stone of the new five-story building of the Bellevue Hospital Medical College, which is being erected at the corner of First avenue and Twenty-sixth street, New York, was laid with appropriate ceremonies on the 13th inst. by Dr. Lewis A. Sayre, Emeritus Professor of Orthopedic Surgery. The conventional metal box was deposited in the stone, containing a history of Bellevue Hospital, copies of the daily papers, the alumni catalogue from 1861 to 1881, a full set of lecture-cards and alumni circulars from 1861 up to the present year, a bottle of antitoxin, and a glass tube containing spores of the bacillus aerogenes capsulatus, which was first discovered in April, 1896. The ceremony of laying the corner-stone was conducted in the presence of the members of the Board of Trustees and the Faculty, instructors, and alumni of the college. The invocation was delivered by the Rev. Dr. Roderick Terry, and Dr.

Sayre made an address. A procession was then formed which marched into the lecture-room of the Carnegie Laboratory adjoining, where addresses were delivered by Dr. Landon Carter Gray, representing the alumni; by the Rev. Dr. Terry, who spoke for the Board of Trustees, and Dr. John S. Billings, who represented the medical profession. The new college building will be one of the most elaborate of its kind in this country, and it is expected that it will be ready for occupancy in March.

Yellow-Fever Notes.—Dr. S. R. Oliphant, President of the Louisiana State Board of Health, Drs. Samuel H. Durgin of Boston, and A. Doty of New York, members of the committee appointed at the recent meeting of the American Public Health Association, are in Washington for the purpose of urging the President to recommend to Congress the appointment of a commission of expert bacteriologists to visit Havana, and make a thorough study of the cause, treatment, and prevention of yellow fever.

A telegram from Colon, Colombia, says that owing to the continued prevalence of yellow fever at Kingston, Jamaica, the Colombian Government is enforcing a quarantine against all passengers from that place to the Isthmus of Panama and Pacific ports. The mails are being detained for fumigation.

On the 9th inst., eight new cases and four deaths were reported in New Orleans. Six new cases were reported in Mobile, Ala., and but one new case in Montgomery. No new cases have been reported in Memphis, Tenn.

No new cases have occurred in Mississippi and quarantine has been raised in that State.

On the 11th inst., twelve new cases and six deaths were reported in New Orleans. The Board of Health on that day abolished all quarantine, both territorial and house, within its jurisdiction. In Mobile, Ala., one new case was recorded. No new cases in Montgomery, Ala. One new case was reported at Edwards, Miss.

President McKinley has detailed Past-Assistant Surgeon Eugene Wasdin and Past-Assistant Surgeon H. D. Geddings, United States Marine Hospital Service, for special duty at Havana, Cuba, for the purpose of making bacteriologic investigations into the cause and nature of yellow fever. These officers have been for some time engaged in laboratory work in New Orleans. Their investigations are to be carried on in Cuba until some definite conclusions are reached.

The oldest son of Sir George Duffey, President of the Royal College of Physicians and Surgeons (Ireland), died recently of yellow fever in Jamaica, West Indies, where he was stationed with his regiment.

The British steamer "Strathdon," which arrived at Bremen on the 16th inst. from Savannah, Ga., has been quarantined for five days. During the voyage one of the crew died of what is thought to be yellow fever.

Appointed State Medical Examiner.—The Board of Regents has appointed Dr. Walter Suitor of Herkimer, to fill the vacancy in the State Board of Medical Examiners, representing the Medical Society of the State of New York, caused by the death of Dr. William C. Wey.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

AN EXPERIMENTAL STATION FOR THE STUDY OF BOVINE TUBERCULOSIS—PHILADELPHIA PEDIATRIC SOCIETY—PATHOLOGICAL SOCIETY OF PHILADELPHIA—THE MUTUAL-AID ASSOCIATION OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY—THE STATE BOARD OF HEALTH'S NEW VACCINATION LAW.

PHILADELPHIA, November 13, 1897.

AN experimental station for the study of diseases of cattle is to be established at the University of Pennsylvania, under the control of the State Live-Stock Sanitary Board, and work upon a building to be used for the purpose will be immediately commenced. One of the first practical points to be determined by the Board is the influence of sanitary stabling upon the development and course of bovine tuberculosis, and to this end the following novel but simple procedure will be employed: Two stables will be built, one large, lighted, and ventilated, and having all arrangements conducive to the best sanitary conditions; the other small, aired, and ventilated with less care than the first, and representing as nearly as possible the ordinary cow-stables as seen on the average farm. Into each of these stables will be placed three healthy and three tuberculous cows, alternated, alternating in stalls between each other. The rapidity of the development and spread of the disease will then be watched in the two herds, and inferences drawn as to the value of sanitary stables.

At a meeting of the Philadelphia Pediatric Society, held on November 9th, the topic of intestinal intussusception occupied the greater part of the evening's scientific business. The medical aspects of this lesion were considered by Frederick A. Packard, who quoted a recent instance of intussusception which he had occasion to treat, and pointed out the indications for and against the use of injections as a therapeutic measure; the speaker emphasized the fact that after the third day, in such cases, the treatment referred to was useless, and he should be abandoned on account of adhesions and softening of the wall of the gut. Dr. Edward Martin, by invitation, spoke of the treatment of intussusception by surgical intervention, and thoroughly discussed the subject from the surgeon's standpoint. Dr. R. G. Le Conte related an interesting account of an instance of intussusception which he witnessed during the course of a laparotomy. In addition to the consideration of the above topic, two cases of congenital hereditary edema were presented by Dr. J. H. Jopson, who detailed the histories of the patients, and made general remarks upon the condition.

A stated meeting of the Pathological Society of Philadelphia was held on November 11th. Dr. Joseph Sailer exhibited a specimen of aneurism of the left ventricle, with myocarditis and pericarditis; there were a few partly occluded vessels with thickened walls, and much dense fibrous tissue scattered through the inflammatory lesion, and a number of cicatrices, suspiciously syphilitic in nature, in the kidneys and liver, although the patient had persist-

ently denied specific infection. Dr. Sailer also showed the lungs from a case of general septic infection; the patient first presented signs of a croupous pneumonia, which progressed to pulmonary abscess, and subsequently general pyemic infections, with collections of pus in the kidneys, spleen, and other organs, giving rise to grave constitutional symptoms, and a fatal termination. Dr. Judson Deland exhibited an appendix vermiformis, showing a common pin *in situ*. The appendix at the time of its removal contained fully six ounces of pus, and the pin occupied its lumen, which was tightly constricted in places from inflammatory processes. Dr. J. Dutton Steele read a review of the literature of Koch's "Tuberculin R.", and considered in detail Koch's early and later experiments with their disadvantages and advances, the dose, mode of administration, and by-effects of the preparation, and its practical bearing on the treatment of tuberculosis. The chief objections to the use of the new tuberculin are the danger of septic infection, the irregular strength of the preparation, and the uncertainty in the correct dose for different individuals. Results from the employment of "Tuberculin R." are as yet too indefinite to warrant a positive opinion as to its usefulness. Other communications at this meeting were made by Dr. J. H. McKee, who exhibited an umbilical hernia in a rabbit containing a portion of the round ligament which simulated a diseased vermiform appendix; and by Dr. David Riesman, who showed a specimen of cancer of the stomach, from a case which had during life presented irregular clinical symptoms.

At the annual meeting of the Mutual Aid Association of the Philadelphia County Medical Society, held on November 9th, Dr. Charles Hermon Thomas was elected president, Drs. James Tyson and Wilson Buckby vice-presidents, and Dr. John B. Roberts secretary. Four members of the Society were elected to the Board of Directors, who passed resolutions to make efforts during the coming year to add materially to the permanent fund of the organization by obtaining legacies and donations. The Directors' report showed that a slight increase might be declared in the amount to be paid as annuities to beneficiaries; that the membership had been increased during the past year by the addition of four life, and two annual, members; and that one addition had been made to the list of benefactors. A private room in the Polyclinic Hospital has been set aside for the use of those members of the Association who may require hospital treatment.

At a meeting of the State Board of Health, held recently, resolutions were passed declaring that certificates of vaccination should not be accepted by school authorities unless they specify the existence of either the typical vesicle, the typical postule, or the typical cicatrix of vaccination; and further, that children who have recently been repeatedly, even though unsuccessfully, vaccinated by competent operators should not be excluded from school, except in the actual presence of danger from smallpox. The most casual reader will notice the diametrically opposite tenor of the two parts of this resolution; the first clause, specific in detail, the second, allow-

ing the certifier an unlimited latitude of interpretation. Further comment on the subject seems unnecessary, except, perhaps, to draw attention to the fact that there are many unscrupulous medical pirates who will take prompt advantage of the second section of the rule, with the comforting assurance that no tell-tale scar will loom up to question their veracity, if queries should be made; and who, pray, will prove that they are not "competent operators"? In these days of antivaccination agitation, laws for the enforcement of this prophylactic cannot be too stringently observed; nor can their interpretation be made too definite.

The total number of deaths occurring in this city for the week ending November 13th was 381, an increase of 51 from the preceding week, and exactly the same number in the corresponding week of 1896. Of the total number 104 occurred in children under five years of age. Reports of contagious disease showed 151 new cases of diphtheria, with 26 deaths; 57 new cases of scarlet fever, with 0 deaths; and 50 new cases of enteric fever, with 12 deaths. The outbreak of diphtheria which occurred last week in one of the wards in the upper section of the city seems to be under control, and the city health authorities have taken active measures to suppress the epidemic, and to investigate its origin, which at present is obscure.

OUR BERLIN LETTER.

[From our Special Correspondent.]

TESTIMONIAL TO PROFESSOR LASSAR—PROFESSOR VIRCHOW'S SEVENTY-SIXTH BIRTHDAY—DEATH OF PROFESSOR HEIDENHAIN OF Breslau—PLEURAL EXUDATES AND THE TENDENCY TO ADOPT AN EXPECTANT TREATMENT—A NEW HOT-AIR TREATMENT FOR LUPUS—THE WINTER SEMESTER AT THE UNIVERSITY—ADMISSION OF AMERICAN STUDENTS TO THE GERMAN UNIVERSITIES.

BERLIN, November 6, 1897.

BEFORE the members of the Lepra Conference separated, a testimonial of their appreciation of Professor Lassar's services in the organization of the Conference was presented to the Professor and his wife. It consisted of a handsome silver service. The gift was the outcome of a suggestion of Professor Arning of Copenhagen, and was warmly seconded by all the members. It was to Professor Lassar that the Conference owed much that contributed to its success, and the interest shown in Government circles, as well as by the Emperor himself, is said to have been due to his well-directed efforts.

Professor Virchow celebrated his seventy-sixth birthday during the week of the Lepra Conference meeting. He was acting as president of the Conference, and the opening of the first-day's proceedings came in the nature of a surprise. On this occasion Professor Lassar presented a large bouquet to the old pathologist whose work on leprosy was done during the early sixties, and whose generous consent to act as president was much appreciated. Despite his age the veteran is still in the ranks. His opinion on disputed points was eagerly sought, and regarded with the greatest deference.

The death of Professor Rudolf Heidenhain of Breslau

means that German medicine has lost one of its greatest men. This distinguished physiologist was but sixty-three years of age, and his death was unexpected. He was once a pupil of Du Bois Raymonds here in Berlin, and succeeded Purkinje in the Chair of Physiology at Breslau during 1859. His work on glandular, muscular, and nerve physiology, and, during recent years, on animal heat, the vagus and hypnotism has given him a fame which is a common possession of the medical world. He is well-remembered for a strikingly ingenious expedient employed during the antivivisection agitation in the German Reichstag some years ago. Through the influence, it is said, of the Woman's Antivivisection Society of England, a bill was introduced in the Reichstag which threatened scientific progress. It is a difficult matter, as Americans know, to persuade legislators that under the guise of humanitarianism some of the proposed laws actually are inhuman, because they are calculated to stop the wheels of science by which so much has been accomplished for humanity. Professor Heidenhain, who was very well-known, took a prominent textbook on physiology, and marked with red ink the facts, the discovery of which was due to animal experimentation and which could not have been found out in any other way. The argument was so effective that Germany has not since been annoyed with serious attempts to prohibit vivisection.

While general lung surgery is advancing with rapid strides, it is somewhat surprising to find that certain points in surgical interference with the more simple lung conditions are not as definitely determined as they seemed to be some years ago. For instance, with regard to tapping in pleurisy, it was once taught that where an exudate remains unabsorbed for a certain length of time (about three weeks) it is better to remove it. The opinion has gradually gained ground that pleurisy is nearly always of tuberculous origin, and coincidentally, the advisability of tapping, unless it be for symptoms indicating serious interference with the lungs or heart, is being doubted.

The sudden relief of pressure would sometimes appear to have led to the absorption of tuberculous material by the lymphatics and to its deposit in other parts of the body. The danger of infection, and the well-known results of a mixed infection where tubercle bacilli are concerned, has also had its deterrent action. Finally, however, the results, when the disease is allowed to run its course undisturbed, and when absorption eventually occurs, are so much better than when tapping is performed, that it has been considered probable, theoretically, that there exists in the serum of the pleuritic exudate an anti-tuberculin with certain curative properties, and consequently it is decidedly better when possible to leave the exudate to Nature for absorption.

In the matter of empyema something of the same conservatism has replaced, in the medical clinics at least, the teaching that the maxim, *ubi pus avacua*, is especially applicable to the pleural cavity. Comparison of the results obtained under surgical treatment with those allowed to run their course, either to resorption or to rupture into a bronchus and evacuation by that route, has not always been in favor of the theoretically perfect surgical proce-

dure. Often enough, the pus in such cases is caused by the diplococcus pneumoniae, not a very virulent pus-producing organism, and one that the lungs, under ordinary circumstances, are perfectly capable of handling. In children, especially, empyemas often run a favorable course when untreated. Surgical interference usually means almost inevitable mixed infection, and this leads to a chronic suppurative process with the production of cicatricial tissue. In general, expectant treatment appears to be indicated whenever there are no immediately threatening symptoms.

Dr. Holländer's method of treating lupus seems to be a distinct contribution to the therapy of an extremely obstinate affection for which the gamut of therapeutic measures is often run without success. The principle is that of cauterization of the tissues, not in the usual way, but by means of heated air. The apparatus employed consists of an ordinary Bunsen-burner to which is attached a coiled tube in such a way that the heat of the flame is directed on the coil. Air is forced through this tube, and issues from a nozzle heated to any degree desired up to 250° C. The current of heated air is directed on the affected tissues until they become white, when the *séance* is interrupted.

In the process of cicatrization subsequent to the cauterization the lupus nodules disappear, and a much less unsightly scar results than usually succeeds lupus. The explanation of the effect seems to be that a certain peristaltic contraction of the fibers of all the tissues of the skin leads to the driving of the blood from the part, hence the intensely white color which follows the application of the heated air. After some days this intense contraction relaxes in the healthy tissues, and after the throwing off of certain portions of the epiderm the circulation is restored. The illustrated account of Dr. Holländer's cases in the last number of the *Deutsche Medicinische Wochenschrift* shows that this simple procedure seems to produce excellent results, especially in facial lupus.

The winter semester of the Berlin University was supposed to have begun last week, but will really be in working order about the first week of November. Not many changes will occur in the medical faculty. Professor Winter, as announced sometime ago, goes to Königsberg as Professor of Gynecology. Professor Rubner becomes Medicinal Geheimrath.

As to the question of American students and their exclusion from German Universities with regard to post-graduate work, the situation absolutely remains what it was despite the rumors to the contrary. Such rumors, by the way, usually find their way into print about this time each year. To matriculate at the University of Berlin for advanced work in medicine all that is necessary is to show a diploma or a license from a State medical examining board. For much of the post-graduate work matriculation is not necessary, and is often gone through with more for the civic privileges it involves than for what the University gives. Matriculants practically are outside of police control for ordinary offences, being responsible to the University authorities, and have certain theater and other privileges which are an additional consideration.

The rumor as to the exclusion of foreign students came from certain laws requiring examinations in all cases where students are applicants for a degree from a German University.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

THE PATHOGENIC ROLE OF DUST—CAN A DOG HAVE THE MUMPS?—OPERATION OF CHOICE IN INTESTINAL OBSTRUCTION.

KELSCH and SIMONIN reported to the Academy of Medicine at the session held October 5th, the results of a series of experimental researches, which show that just *as powerful agents of infection are to be found in the dust which collects upon floors, as in drinking-water.* They believe that with the exception of typhoid fever and cholera, the majority of infectious diseases, such as eruptive fevers, diphtheria, pneumonia, and especially tuberculosis, when they do not result from direct infection, are usually due to microbes existing in dust. Most of the contagious diseases which develop in barracks without having been brought in from the outside arise from the dust deposited in the course of previous epidemics or carried in upon the boots. In order to avoid such infection they recommend that the floors of such buildings be rendered impermeable by a coating of coal-tar.

LAVERAN said that coal-tar, even if applied in a satisfactory manner, is not as efficacious as it might be. "A good coat of coal-tar removes the danger arising from the floor itself, but it does not affect in any way the contagion contained in the dust existing under the floor. I am inclined to think, therefore, that the best plan would be to entirely do away with wooden floors in barracks, hospitals, and all buildings in which many people are living together."

LAVERAN reported upon *a case of mumps said to have been transmitted to a dog.* The animal became sick with parotiditis two weeks after its master fell ill with the mumps. It was by no means certain, however, that the dog had the same disease. The constitutional and local symptoms, it is true, closely resembled those which occur in mumps, the parotiditis rapidly subsiding, as is usually the case in human subjects. Still, it is worthy of note, that the swelling of the parotid region was limited to the right side, whereas mumps usually affects both sides. In addition, the lymphatic glands of the region were greatly swollen and tender, and they remained enlarged and indurated after the resolution of the parotiditis, a condition which is rare after mumps. Further researches are called for before the transmissibility of mumps from man to the dog can be accepted.

At the session of the Society of Surgery held October 6th, QUENU disputed the opinion of Broca, and claimed that *in certain cases of intestinal obstruction* which do not yield to electricity *an artificial anus is indicated.* In some cases a very small opening into the cecum permits the escape of gas and allows the intestine to resume its normal peristaltic action.

KERMISSON did not look upon celiotomy as a univer-

sal method of treatment in cases of intestinal obstruction. In numerous instances an artificial anus is the operation of choice. He is convinced "that we possess diagnostic points sufficient to distinguish the cases in which celiotomy is indicated from those which will be relieved by an artificial opening into the bowel. The decision depends absolutely upon the cause of the obstruction."

RECLUS, twelve years ago, was called to see a man seventy-seven years old suffering from intestinal obstruction and great tympanites. The formation of an artificial anus was quickly followed by the re-establishment of the normal course of gas and feces, and the patient is still living.

SEGOND said that in every case, whether the diagnosis was clear or not, it is necessary to spare the patient as much as possible; hence, an artificial anus is indicated. Thus, in post-operative obstruction, such as may occur after vaginal hysterectomy, celiotomy may possibly succeed in relieving the obstruction; but according to his experience the patients so operated upon all die. The establishment of an artificial opening, on the contrary, gives the maximum chance of recovery. In conclusion he would say that the establishment of an artificial anus snatches the patient from death, oftentimes produces a complete cure or at least puts them in a position, as in the case of tumors, to be cured by a later operation, and never, or hardly ever, causes immediate death.

NELATON gave it as his opinion that in the majority of cases it is impossible to determine the cause of obstruction. In these conditions celiotomy adds an unjustifiable risk. He performed it once and death resulted, while the production of an artificial anus has given him excellent results. If one can be certain that obstruction is due to a band, celiotomy is indicated.

MICHAUX thought that in acute cases in young patients celiotomy is the only rational procedure. If there is a great degree of tympanites, it is advantageous at the beginning of the operation to puncture the intestine and to allow the escape of fecal matter and gas. He has followed this plan successfully in several cases. It is only when the laparotomy gives no result that the operation should be terminated by an artificial anus.

ROUTIER said that if one does not know the site of the obstruction it is better to perform celiotomy if the condition of the patient warrants it. Moreover, an artificial anus is not as simple as some might think. In 1889, Curtis showed that this operation had a mortality of 48.7 per cent.

HARTMANN believed that celiotomy is the method of choice in the treatment of obstruction, and that the mortality which follows results rather from the duration of the condition than from the operation itself.

CHAPUT spoke of the difficulties of celiotomy for obstruction. The intestine is often enormously distended, and the manipulation which is required to inspect it and restore it to the abdominal cavity renders the operation particularly dangerous. Even in cases of obstruction due to a band the creation of an artificial anus may give excellent results, for it is the distention of the intestine which produces the obstruction, and if that is re-

lieved the normal course of the fecal matter may be resumed. It is only in acute cases without much tympanites that the celiotomy should be advised.

At the session of October 14th, the discussion of this subject was continued. LEJARS said that there is a mild variety of paralytic ileus which yields to electric treatment. In another form of paralytic ileus there are more obstinate symptoms, and these cases may prove as serious as those in which a volvulus or a band exists. It is impossible to lay down a hard and fast rule for the treatment of all cases. An exact diagnosis is often impossible, and if electric treatment is without result he inclines toward celiotomy. If nothing is found to explain the obstruction a fecal fistula should be established.

FÉLIZET said that in children the delicacy of the intestinal walls renders celiotomy especially dangerous. This and other reasons has lead him to the conclusion that an artificial anus, which can be easily established without general anesthesia, is the best form of treatment. Some days later when the abdomen has resumed its normal flaccid condition, there will be a reasonable chance of making a correct diagnosis, and the surgeon may then act in accordance with it.

PICQUE thought that in genuine obstruction treatment should depend upon the diagnosis. If, as often happens, this cannot be exactly determined, an exploratory laparotomy should be performed, and is the cause of obstruction is found, an attempt should be made to relieve it. If no cause is found, then either an artificial anus or an enteroanastomosis is indicated. Naturally, if the diagnosis is that of a lesion not amenable to operative treatment, an artificial anus should be performed to relieve the patient as much as possible.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.—SECTION ON GENERAL MEDICINE.

Stated Meeting, Held October 19, 1897.

DR. F. L. BISHOP in the Chair.

DR. WILLIAM OSLER of Baltimore read the paper of the evening, entitled

INTERNAL MEDICINE AS A VOCATION. (See page 660.)
DISCUSSION.

DR. WILLIAM M. POLK: I feel much indebted to the distinguished gentleman who has so kindly come a long distance to give us his impressions as to the right path to be followed to attain success in internal medicine. If the author were not present, it might not be out of place to draw attention to the enviable position which he himself has reached by following the lines so gracefully sketched in the paper of the evening. I do not know but that there is a good deal in the Doctor's intimation, that surgeons are perhaps excused from the possession of the amount of cerebral tissue, or the exercise of that tissue, which is essential to the success of him who confines himself to internal medicine. No man can practise any department of medicine unless he has a knowledge of

internal medicine. All, therefore, that Dr. Osler has said, as to the necessity for persevering work, we should take to ourselves quite as much as he intends the consulting physician to claim. There is no doubt that the surgeon takes up his work where he who gives his attention to internal medicine leaves off. This does not necessarily imply, however, that all bad and hopeless cases are turned over to the surgeon; for the practitioner of internal medicine, by reaching conclusions as to the limitations of his powers, is in a position to say whether he can continue the work, or whether it shall be taken up by the surgeon.

The poorest surgeon is he who begins his work as a surgeon; for he inevitably magnifies his field to the detriment of that of the physician, frequently when his comrade would have been able to bring the case to a successful conclusion. Often, if the surgeon has but the patience to withhold his hand, he will find that there are means and measures at his command, not strictly surgical, which will accomplish the purpose.

In reference to the way in which a good consultant is made, along the lines suggested by Dr. Osler, one of the first principles is to learn how to write. One must possess ideas if one would give expression thereto, and ideas cannot be obtained except as suggested by Dr. Osler. But, those who have followed some of the attending consulting physicians through the wards of the hospitals, not so very far away, remember full well how the men who wrote had the greatest reputations, but oftentimes the men who did not write could best tell what was the matter with the patients. No matter how much knowledge may be possessed, if we expect to win the confidence of those who are not merely at our doorstep, but in the adjoining towns and distant cities, the legitimate method of professional advertising must be learned and practised.

The curse of to-day is specialism. This may seem a broad statement to make; but it is, nevertheless, true. Specialism makes narrow, uneducated physicians. The human mind is so constituted, that given any problem to solve, it builds upon it, raises it up, magnifies it until every other idea is completely overshadowed. Thus, it occurs, that while specialism has accomplished great good, it is to-day demoralizing the profession by bringing it into contempt with the laity. Many patients are made to believe, perhaps honestly on the part of the physician, that conditions which are amply met by the ordinary rules of hygiene are of such vast importance that they must be attended to then and there or some dire calamity will result. This is perhaps presenting a low view of specialism, but it has its low as well as its high side. No man will be a good specialist who has not been a good general practitioner. In this respect the example of the carrier-pigeon should ever be borne in mind, which, when loosed to execute some special mission, rises higher and higher, ever circling upward and upward to obtain the broadest view, and then gathering its strength, starts and flies straight to the goal where it would be.

DR. ANDREW H. SMITH: I have been interested in observing how the two preceding speakers approached the question from two directly opposite points of view. Dr.

Osler's idea of a practitioner of internal medicine seemed to be that he should start from the very inception of his medical career with the distinct idea of making himself a consultant. Dr. Polk, on the other hand, has an idea to the main chance, and immediately starts off with a view to success by obtaining practice. Perhaps it would be best to choose a happy medium between the two.

With reference to the preparation of which Dr. Osler spoke, it would certainly require all the time that he had assigned to it, and it seems that the study of internal medicine would necessarily include a very considerable knowledge of the specialties. In order to attain the necessary erudition, all opportunities which open in the way of practice except such as are conducive to obtaining business as a consultant must be refused.

It is said of John Hunter that at one time when engaged in a very earnest study of some subject, in the midst of which he was interrupted by a professional call, that he put it off and put it off as long as he could until he thought the patient's patience would be exhausted, and then, throwing his work aside, said: "I suppose I must go and earn that damned guinea." This is the necessity which presses upon us in this utilitarian age to such an extent that, unless a certain number of young number of young men are determined to follow the lines indicated by Dr. Osler, it seems that the great consultants of the future will be about as scarce as the great statesmen of the present time. About the period during which Dr. Flint was so prominent here there were many great statesmen; they are gone, and we look in vain for their successors. Just so in medicine. There is a multitude of very clever men, but there are very few who stand head and shoulders above their fellows. Aside from a special training, it seems that to reach the place which had been attained by the men mentioned by Dr. Osler that there must be some peculiar attending circumstances.

Many young men have come to me and asked what they should do—where they should settle, and I have always told them to see much of disease, to put themselves in touch with it in any way they could, but at the same time to only handle as much as could be thoroughly and exhaustively studied; to keep themselves constantly occupied with sick people, and to treat every case, whether that of a tramp or a millionaire, with the same painstaking care. This character of work, continued year after year, without in any way seeking the plaudits of the world, simply plodding along day after day, always doing good work, with the interests of patients at heart more than personal aggrandizement, will almost invariably lead to success.

There is one point upon which I wish to touch in particular, and that is the distinction between a good diagnostician and a good practitioner. It is said of the French school that they first make a diagnosis and then are impatient for death to occur, that the diagnosis may be satisfactorily verified. It seems that many of our consultants have about the same idea. Frequently they are unable to assist us in therapeutics. I believe there is something in the therapeutic instinct. There are some men who, when you consult them, always give you an idea to fol-

low—something to do for the patient. This instinct, which teaches a man what may be done to relieve suffering, even though life may not be prolonged, is of immense value. I have often found this faculty to be remarkably developed in men whose field of labor is rural, where they have been thrown upon their own resources. I have often come in contact with such men, and have been surprised at their fertility in therapeutics, and how many times they "get there" when men much more thoroughly equipped halt by the way.

DR. ABRAHAM JACOBI: I am wholly unprepared to discuss this question, but will say a few words in favor of those who have made internal medicine their vocation, if only in the lower or middle walks of the profession. The practitioner of internal medicine has lost ground during the past ten or twenty years in favor of the specialist. Internal medicine has certainly lost in the opinion of the public. The practitioner of this branch of the profession does not spill much blood, does not crush bones, cannot be heard at work in the next room; the principal labor is accomplished in the brain, and is not very noisy. The surgeon removes a tumor which the general practitioner has diagnosed, and the result is that people say "Isn't he a brilliant surgeon? Doesn't he do fine work?" and it might be added, "Didn't he get your fee?"

Everything now goes to the specialist. If a woman has a pain in the head, she must go to a neurologist; if it is somewhere about the feet, she must go to a chiropodist; the nose must be blown by a rhinologist, and the laryngologist takes the case of catarrhal croup; there is the abdominal surgeon and the appendicitis man, so that now nothing remains for the practitioner of internal medicine; his vocation is gone.

I have been a general practitioner nearly all my life, and hope to live a few more years and die a general practitioner. I am quite satisfied with my position; because it appears that if there is any breadth in medical science, it is in the practice of internal medicine. Everybody deems the specialist very broad and deep, when, as a matter of fact, a great many of them do not know anything about medicine. "Internal medicine is a vocation where one deals, not only with every organ of the body, but with lives and hearts. Such a practitioner must care for, not only existing diseases, but for such diseases as may be developed; he naturally is the hygienist of the family. If a good sanitarian is wanted, it will be necessary to look for him, not among the surgeons, the laryngologists, or even among the bacteriologists, but he will be found among broad, well-educated internal practitioners, and if the accomplishments of the general practitioner are compared with the dexterity of the ever so good specialist, it will be found that there is more breath, more impressiveness, and more influence, privately and publicly, in the accomplishments, achievements, and actions of the general practitioners, take them altogether, than specialists can ever acquire.

From Hippocrates all the way down to modern times, there have been those who have made internal medicine their vocation. The surgeons of olden times have disappeared from history and from the memory of the profes-

sion. It is always the memory of the internal physician which survives. I believe that specialism is now at its height, not at the top of the ladder, but at its height, and we shall have fewer specialists in the future. It is my certain conviction that whatever there is that is good and useful for the common weal, will have to be searched for in internal medicine, which will then be the vocation of the profession.

DR. OSLER: I have listened with a great deal of interest to what has been said, and do not wish to be understood as reflecting seriously upon the surgeon. I only intended to say that with the surgeon success comes earlier, and that with him, in many cases, it is very much more a matter of hands than of head. In reference to a young man starting out in general practice, I believe that the plans followed by the young men in London could be followed with profit in our large cities. In London the young man who aspires to consultant-work does the junior duties about the hospitals and dispensaries, in many cases until he is forty-four or forty-five years old, before he reaches the wards. The young man, in the large cities of this country, who aspires to be a consultant should probably do more or less general medical practice, but the main work upon which reputations are to be built, should be in the hospitals and dispensaries. I am quite sure that the London method has proven successful, and that many of our best men in this century have never been in general practice; that is to say, in a large general practice, but have directly developed from dispensary and hospital work. There is no reason why a young man, during the first five or six years, who is looking forward to be a consultant, should not learn to use the ophthalmoscope, just as well as the microscope. He is sure that if Dr. Flint did not know much about bacteriology he took care to have a young man about him who did. There is one thing which always impressed me in regard to Dr. Flint's character, and that is, he retained to the last a remarkable degree of receptivity.

In regard to diagnosis, I believe it is a very important matter in consultation. In a large proportion of cases it is the only important function of the consultant. Everything rests with the diagnosis. Of the last three cases he had seen within twenty-four hours, one had pernicious anemia which was not recognized—the patient had been treated for malaria and the diagnosis would give him a few months or years, and possibly give him life; the second case, being cancer of the stomach, it did not make any difference; in the third case, the diagnosis may or may not save life, depending upon the surgeon into whose hands the patient falls. One trouble with the consultant is that their visit usually precedes that of the undertaker, and that they sometimes do not reach the door before the black flag is out. This is one of the saddest things in the life of a consultant; he is simply an attendant upon deathbeds.

In conclusion, I believe the position of internal medicine in this country will grow better and better. I feel confident that the younger men will devote themselves to internal medicine in the broad sense of the term—in the sense of being hospital physicians, clinical investigators,

and clinical teachers. After all, the chief prizes of the profession do not fall into the hands of specialists, but into those of the men who have had a long, hard, uphill struggle, who have worked and toiled for years as surgeons and as physicians.

HARVARD MEDICAL SOCIETY OF NEW YORK.

Stated Meeting, Held Saturday, October 23, 1897.

THE President, DR. JOHN WINTERS BANNAN, in the Chair.

DR. FOLLEN CABOT, JR., read the paper of the evening, entitled

RABIES; SOME EXPERIMENTAL WORK ON A NEW METHOD OF IMMUNIZATION.

The author exhibited a trephine such as is used in Paris for making subdural inoculations in rabbits and guinea-pigs. He also showed an apparatus devised by himself for holding an animal during inoculation, thus avoiding the necessity of tying it to a board, and the consequent fright and struggle. The animal is chloroformed previous to the trephining.

The paper gave in detail the results of experiments made upon guinea-pigs and rabbits at the research laboratory of the New York Board of Health and described at length the process of preparing the immunizing solution. The dry-cord method, which is employed by Dr. R. J. Wilson, is the one used by the author. This consists of a dilution made from fresh medulla or brain taken from a rabbit which has died of rabies. A stock solution is made and kept on ice in varying amounts of sterile glycerin, and each day dilutions are made from it for immunizing purposes. Such a solution is kept and used ten days. The advantages of this method are: (1) it can be tested for impurities before being used; (2) it is more exact and saves much time; (3) the stock solution may be sent to distant places and used by physicians in general.

DR. HOWARD LILIENTHAL said he possessed little knowledge of the subject, but it seemed to him that the author's work is valuable, and that he deserves to succeed in his very worthy object of furnishing an immunizing solution which will be within the reach of practitioners all over the country. As it is now, it is only in a few of the large cities that the antirabid serum may be obtained. Personally he has never seen a case of rabies, but the results of the author's experiments would seem to show that such a disease really exists.

DR. JOHN H. HUDDLESTON expressed surprise at the hesitancy of the preceding speaker in admitting that there is such a disease as hydrophobia, and said it had always been his opinion that the existence of the disease is generally accepted. Personally, he has no doubt of its reality because he has seen three cases occurring in human beings, all of which were fatal, and approved to be genuine by subsequent inoculation of animals. Nothing was done for the patients because nothing could be done. If an immunizing agent has at last been found, we will have to thank the author of the paper for it.

DR. REYNOLD W. WILCOX confessed to an even

greater skepticism on the subject than that shown by the first speaker, and said he had never seen a case of hydrophobia in a human being. A number of alleged cases of hydrophobia have come under his observation, and he has seen one or two dogs which were said to be suffering with rabies, one of which he personally watched for several weeks; but he is still to be convinced that the disease exists, even in dogs. He brought forward the fact that in Constantinople, which swarms with dogs, rabies is unknown, and, in other countries where conditions supposed to be equally favorable to the development of the disease are found, it has not been heard of. He thought the author deserved credit for his work, but added that the best result which can be obtained from such a line of investigation will be the determination of the non-existence of rabies.

DR. ARTHUR B. DUEL said that the belief that such a disease as rabies does exist is firmly planted in the public mind, and is shared by many physicians. If it can be proved that there is such a disease, too much cannot be said in praise of the work of the author in an endeavor to discover an immunizing serum, and one which will be accessible to physicians far removed from large cities.

DR. EDWARD F. FOOTE remarked that in experiments on animals it should be remembered that one cannot always reason by analogy for the same agent does not affect human beings and animals alike. This fact has been a block against which many men have stubbed their toes. Even the great Koch himself made this mistake, as shown by the disappointing results obtained when his tuberculin was tried on the human subject.

DR. CHARLES SCHRAM said that those who are familiar with Pasteur's work and that now being done at Budapest can hardly doubt that the human being is subject to hydrophobia.

DR. FRANK H. DANIELS expressed himself as being skeptical as to the existence of rabies either in animals or man. He is of the opinion, however, that it is sometimes best to treat patients when they think they need treatment, and in such cases it would be well to have some immunizing agent administered to persons who have been bitten by an animal and who fear they are going to have hydrophobia.

DR. DILLON BROWN declared that he is thoroughly convinced that there is such a disease as rabies, and that it may exist in the human subject. No one who has witnessed it in the rabbits and guinea-pigs which have been inoculated at the Health-Department laboratory can possibly doubt its existence. He said he had seen one case of hydrophobia in practice. The patient had been bitten on the cheek by a supposedly mad dog, and was sent for treatment to the only institution in this city where the antirabietic serum is employed. A certain number of injections were given and the patient promptly died on the sixteenth day after developing a classic case of hydrophobia. Unfortunately no autopsy was obtained. Whether the disease was due to the bite of the dog or to the inoculations is a question. Taking all things into consideration, it is not unlikely that it was caused by the latter.

DR. FOLLEN CABOT, SR., said that during his long

residence in New York he has observed two cases of hydrophobia, both of which resulted fatally within four days of the appearance of the first symptoms. Both cases were carefully watched, and no hysteric element was present. In one the disease was the result of the bite of a dog, in the other it was caused by the bite of a cat.

DR. FOLLEN CABOT, JR., said he was surprised at the skepticism displayed by some of the members present. After the work of Pasteur he thought no one could doubt the existence of rabies. The guinea-pigs and rabbits which have been inoculated at the laboratory of the Health Department all developed the disease, presenting the same symptoms and invariably dying within a certain number of days.

DR. WILCOX remarked that skepticism has been growing year by year, and is made stronger by the reports issued by the so-called Pasteur Institute in this city, which prove, if they prove anything, that the patients treated there all die within a certain length of time after receiving the inoculations. The speaker said that from a report of the Pasteur Institute of St. Petersburg, which he had been reading recently, it seemed that the patients which died after the antirabietic inoculation really died of septicemia. He also said that there is no known inoculable disease which has an incubation period of from one day to twenty-five years, which is the limit claimed by the believers in hydrophobia.

THE PRESIDENT asked the author if any definite lesions are found in animals who die after experimental inoculation, and, if such exist, whether they have ever been found after death in persons who believed they had hydrophobia.

DR. CABOT replied that some definite lesion has been found in pathologic work on animals, although it has not been clearly determined. He also took exception to Dr. Wilcox's remark in regard to the incubation period of rabies being from one day to twenty-five years. He thinks that no one nowadays makes such a claim. The disease generally appears within fourteen days, and always within a month. Every animal inoculated with the serum at the Health-Department laboratory developed symptoms of rabies in from three to sixteen days, and died within a month. The disease begins with gradually increasing paralysis of the hindquarters, paralysis of the jaw, progressive weakness, and in the *dumb* form the animal becomes weaker and weaker, and finally lies down to die. In the *furiosus* form delirium develops, the animal becomes wild and dies within a few days.

DR. WILCOX then said that the symptoms described by the author as occurring in the inoculated animals are precisely the same as those which appear in guinea-pigs after they have been injected with cod-liver oil, *i.e.*, symptoms of ptomain poisoning.

DR. CABOT replied that it is quite possible that symptoms resembling those of ptomain-poisoning may develop after the antirabietic inoculations.

DR. CHARLES SCHRAM then read a paper, entitled
PTOMAIN POISONING FROM EATING LOBSTER.

(See page 659.)

DR. WILCOX remarked that in the light of the subse-

quent events all would agree with Dr. Schram in his diagnosis, although many difficulties presented in the beginning. He also said that no internal preparation of bismuth is poisonous, although many curious effects have been noted after its administration. He cited the case of a woman who during four- or five-months' stay in a hospital received no bismuth whatever, and yet a mass of it weighing half a pound was found in her stomach after death. He also referred to a case of psoas abscess resulting from caries of the spine, into which one ounce of a ten-per-cent. emulsion of bismuth had been injected, and in which serious symptoms of poisoning developed. He stated that in all the cases of bismuth poisoning which have been reported the drug has been used externally in combination with glycerin. The speaker has taken 90 grains of bismuth internally with no bad effect except the resulting constipation.

DR. FOOTE said that the sudden disappearance of the fever might have been due to the large evacuation; in other words, that the temperature may have been caused by long retention of undigested food. He mentioned the case of a woman, suffering from fecal retention, who suddenly developed such serious symptoms that she seemed to be in danger of dissolution. All symptoms were immediately relieved by the discharge of a quantity of fecal matter through an artificial anus.

DR. DANIELS said he did not consider the case one of ptomain poisoning, because the symptoms were not sufficiently acute in the beginning. There would have been severe vomiting, diarrhea, and collapse within two or three hours, followed by great pain. He referred to an instance in which several members of a family suffered in this way from ptomain poisoning, due to drinking butter-milk.

DR. SCHRAM, in closing, remarked that retention of fecal matter would not explain the high fever which preceded the evacuation. The patient was a strong, healthy woman, not likely to be prostrated by such a movement. As against the theory of ptomain poisoning, of course there is the fact that two other members of the family ate of the lobster and were not in the least affected by it. He also expressed himself as not being sure that the naphthol did not play a part in causing the trouble. The drug was retained for thirty-six hours above the fecal mass, and was discharged with the latter. This he considers an important point.

REVIEWS.

APPENDICITIS AND ITS SURGICAL TREATMENT. By HERMAN MYNTER, M.D. (Copenhagen), Professor of Operative and Clinical Surgery in Niagara University; Surgeon to the Sisters of Charity Hospital in Buffalo, N. Y. Philadelphia: J. B. Lippencott Co., 1897.

THIS is a monograph of 303 pages submitted by the author to his alma mater for the degree of M.D., twenty-six years after his graduation. "The degree of Doctor of Medicine is not conferred in Denmark at graduation as in America," although the right to practice is given.

Aside from publishing the histories of seventy-five cases

of his own, the author has industriously conned the literature of the subject, and has given us a monograph at once scientific in conception and interesting in treatment. He has made it clear that appendicitis is a surgical disease, and in so doing accepts the verdict of American physicians. We believe that in no other country do surgeons and physicians agree more universally on any topic in the whole realm of medicine, than does the American profession on this.

The author has divided his subject into several chapters, dealing respectively with the history of the disease, the anatomy, histology, and function of the appendix, and the etiology, pathology, classification, symptomatology, complications, diagnosis, prognosis, and treatment, medical and surgical, of appendicitis. We wish he had not included Austria under "Germany," but this seems to be an inevitable failing of American writers.

The book is very readable and interesting, and will certainly meet the approbation of American surgeons. We hope it may do some much-needed missionary work in other parts of the world.

THERAPEUTIC HINTS.

For Asthma.—

℞ Tr. opii 3i
Ætheris sulph. 3ii.

M. Sig. Fifty drops at intervals of one-half hour until the spasm is relieved.

For Acute Infectious Gastritis in Infants.—

℞ Cupri arsenitis gr. $\frac{1}{80}$ - $\frac{1}{4}$
Sacchr. lact. gr. 3i ÷ i.

M. Div. in chart. No. XVI. Sig. One powder hourly, and when improvement begins give one powder every two or three hours.—*Krüger*.

An Excellent Vermifuge for Children Is as Follows:

℞ Benzonaphthol } aa gr. xxx
Santonice }
Sacchr. alb. gr. 3i ÷ i.

M. Div. in chart. No. XX. Sig. Two to five powders daily.

For Cephalalgia.—Pyramidon, related to antipyrin, is reported to be of great value for the relief of headache and all neuralgias of a rheumatic origin. The dose is 1 to 3 grains in water. Not more than 5 grains should be administered during an attack.

For Arterial Sclerosis.—A potion consisting of water and bicarbonate of soda, to which is added a sufficient quantity of lactic acid to neutralize the former, is advocated by Rumpf as a diuretic in arterial sclerosis. It also increases the elimination of the calculi-forming salts.

For Chronic Cystitis.—

℞ Methylene-blue gr. xxxii
Talcum gr. xlviii
Lanolin q. s.

M. Div. in pil. No. XXIV. Sig. Two to four pills daily.

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ORIGINAL ARTICLES.

THE USE OF MANGANESE IN THE TREATMENT OF DYSMENORRHEA; WITH REPORT OF CASES.

BY CHARLES O'DONOVAN, M.D.,
OF BALTIMORE, MD.

IN THE MEDICAL NEWS of April 6, 1889, I published an article, entitled "A Plea for the Use of the Manganese Compounds in Certain Forms of Dysmenorrhea," in which I drew the following conclusions:

1. The manganese compounds are valuable additions to the therapeutics of dysmenorrhea, and in a certain number of properly selected cases, great benefit may be expected from their use.

2. Their use does not interfere in any manner whatever with the administration of iron or the vegetable tonics, but rather aids and is aided by them.

3. The best results from the employment of these remedies may not be obtained at once, and failure should not be confessed until after a continuous trial lasting three months.

4. So far as we know at present, the black oxid of manganese is the most convenient form for administration.

At that time the observations of Ringer and Murrell of London called attention to the benefit to be derived from the compounds of manganese in various menstrual disorders, and other clinicians had testified in their favor. Having enjoyed a certain vogue at the time, in the avalanche of new remedies which are being constantly exploited, manganese seems to have lost its prominence, and is now seldom referred to. I feel that this is a mistake, that a remedy, valuable in a number of cases, is being overlooked. That it is one which deserves to be rescued from oblivion and again presented for study and trial. I have been using manganese constantly since the appearance of the paper quoted, and am to-day as favorably impressed with it as when I reported my former observations. I hold it to be most valuable in the treatment of dysmenorrhea in unmarried women; and, until it has been faithfully tried during a period of not less than three months without intermission, I would use no other treatment.

Manganese will not relieve all cases; in some it produces no effect whatever, and in some few in-

stances women have complained that their sufferings actually seemed to have been exaggerated; but when it does act favorably, it is such a boon that it cannot be overvalued. Unfortunately, one cannot foretell in a given case whether or not manganese will be of benefit; I have known it to fail when I had most reason to expect success, and to relieve when I feared it would fail, so that its use is somewhat empiric, and apt to lead to disappointment. This does not, however, change the fact that a large number of cases of dysmenorrhea may be relieved by its use in a way that no other drug can approach, and often after numerous others have been tried and discarded as useless. Even in these days of manipulative and operative gynecology there are many young women who would prefer to be treated by medicines rather than by instrumental interference; who are very naturally frightened out of the office of a physician who suggests a digital examination as soon as a history of dysmenorrhea has been elicited.

In my experience the best results from the use of manganese have resulted when the history is of general malaise before the flow begins, with some pain, growing rapidly worse as the flow is about to commence, and pain more or less severe during the first day. A good color or a pale face seems to have no bearing upon the action of the drug; its action appears to be upon the nerves or nerve-centers concerned in the menstrual function, rather than upon the blood. It is no unusual thing to find a habit of dysmenorrhea, which had existed for years, yield at once to the exhibition of manganese.

The following case is an example:

CASE I.—B. J., aged twenty-five, unmarried, had always suffered from her menses since their establishment. Every month, for as long a period as she could remember, she had spent one day in bed, with severe pains, which she tried to deaden by taking whisky, about six or eight ounces being her ordinary allowance. Her sickness came on regularly every month, but always with a sense of weight and heaviness about the loins, and with excessive pain during the first day of the flow. The pain was no worse than it had always been; nor had the amount of the flow, nor the time which it lasted, changed during years of suffering. She had been a robust girl, taking a great deal of exercise out of doors. When younger she had been rather plump, with good development of bust and hips, but had at this time grown much thinner. Although she had

always been considered sensible and self-contained, she noticed that she easily lost control of herself and gave way to crying spells and fits of depression without sufficient cause, especially just before her menstrual periods. She became quite dyspeptic and constipated, and "colds," which she formerly disregarded entirely, were thrown off with difficulty. She did not blame her dysmenorrhea for any of these troubles, but found that she was less able to put up with these discomforts because of the weakening effect of the regular dysmenorrhea. Early in April, 1895, I prescribed black oxid of manganese, in combination with dried sulphate of iron and extract of nux vomica, in pill form, three times a day during the ten days previous to her menstrual period. On May 1st, she reported that her menses came on during the night, with none of the old feeling of discomfort, and so free from pain that she was not even awakened. This was a totally new experience, and incomprehensible to her, but she remained in bed during the first day of the flow, from force of habit, expecting every moment the return of the usual pain. On June 19th she reported a similar experience. She took the pills daily during the ten days before menstruation; again, she rested during the first day in anxious expectation, but had no pain. Before her period in July she took the pills daily during a week.

By this time, womanlike, she thought that she could act during menstruation just as at any other time, so she was quite imprudent regarding her exercise and clothing, but she experienced no ill result beyond a trifling amount of pain. I explained to her the limit of benefit to be derived from the medicine, and the necessity for care during menstruation even in healthy persons, and she promised to conform to my advice. I have heard from her several times since and she always reports favorably of the action of the pills, saying that she would not be without them for any consideration.

Inasmuch as iron and nux vomica as well as manganese were given, one might be inclined to attribute the resulting benefit to these drugs as well as to the last, but this I am not willing to do. The only improvement in the young woman's condition is that described; she is still as anemic as before; she has not gained in weight; she is still dyspeptic, and finds colds just as troublesome as formerly. The one function improved is that of menstruation, and in that alone does she see any change. She is not so depressed and inclined to the "blues," and she does not suffer pain during her periods. She expected to improve in all her other functions as soon as her dysmenorrhea ceased, but such a result has not followed.

CASE II.—V. K., aged twenty-one, unmarried, a very quiet, sensible girl, with no nervous symptoms whatever, consulted me March 6, 1897. She had a good complexion, was well developed, but not fat, had a good bust and fair hips, and seemed healthy in every way. She was a dressmaker

by trade, and formerly thought that the sedentary occupation and confinement to the workroom had much to do with her suffering, but during several months she had been out of employment, doing nothing but light work about the house, and had had plenty of time for out-door exercise. In spite of this, there was no improvement. Her menses began at the age of fourteen, and she had always had pain during the flow; this was bearable at first, but gradually grew worse until it became agonizing during the previous two years and was constantly growing worse. Menstruation was regular, and lasted six days, the pain continuing during the entire time, but being terrible during the first day, which she always spent in bed, taking large quantities of whisky or gin. This resulted only in somewhat alleviating the pain. Between her periods she was perfectly well in every particular. She had unsuccessfully tried various remedies recommended by friends, but had never been examined or taken any medicine prescribed by a physician. Her mother brought her to me for examination and local treatment, to which the girl was naturally much averse. Instead, I ordered black oxid of manganese in 1-grain pills, one to be taken after each meal until after her next period. On March 29th she reported that she had regularly taken the pills and had passed through a period. Although she still suffered a good deal, she felt much encouraged, as she was sick but four days, instead of the usual six, and with much less pain. On the first day of the flow the pain was distinctly less, and even then lasted a much shorter time, so that she was compelled to stay in bed only half the day. She was ordered to continue the same treatment. On April 26th she reported after another period. She had taken the pills, irregularly, until within a week before her time, but for the last week had faithfully taken them. Her period came on three days late, and lasted five days. For the first time in years she did not suffer pain; she was up and about every day, and was able to do her housework without any inconvenience. She was directed to take the pills regularly during at least a week before each succeeding period and report her experience.

From this girl's appearance and general health one would not have supposed that she experienced trouble with her menstrual function; from her history one would suspect the existence of some uterine malposition, most likely a uteroversion or flexion, producing the six-days' flow, with pain and congested feeling, and naturally some local treatment would be suggested after making the diagnosis by vaginal examination. Yet perfect relief was very promptly obtained without recourse to any instrumental interference or to anodynes. When I learned her symptoms I did not expect relief to follow so promptly, if at all; I thought she had some uterine displacement which would require treatment, yet on general principles, because I dislike very much to examine unmarried women unless it is absolutely necessary, I

decided to try first what could be accomplished by appropriate medical treatment.

I could never find out what remedies this girl had been given by her sympathetic friends, but I have often met girls whose drug-knowledge appeared to be quite extensive, either from their own experience or from what they had learned from others. The danger is that some anodyne may be tried, and in this way a craving for such drugs become established. Women are very clever and soon learn to read prescriptions. Already having a newspaper knowledge of morphin, antipyrin, phenacetin, and similar drugs they soon find out which acts most promptly and powerfully and have recourse to it without the formality of consulting a physician. Manganese, however, is an unknown quantity and does not appeal to the female imagination, nor, unfortunately, to the medical mind as much as it should.

CASE III.—S. G., aged eighteen, unmarried, consulted me June 18, 1895. She began to menstruate at the age of twelve, and always suffered. The flow usually lasted but two days. She always had excessive pain during the entire first day, so that she was compelled to remain in bed. She was a school-teacher and naturally rebelled against this suffering and loss of time. She had always been very irregular, menstruating at intervals of two, three, or four weeks. She had been treated by various physicians, with many different drugs, but none gave much relief. Antipyrin, in large doses, served to quiet her for a time to some extent, but left her very weak. She was seriously contemplating having her ovaries removed.

I prescribed the black oxid of manganese, in 1-grain pills, three times a day, during the next month. On July 15th she reported that menstruation came on after four weeks, that she was sick three days, and that she suffered some during the first two days, but that her suffering, though prolonged, was much less in the aggregate than at any period for a long time. I advised her to continue the pills regularly. She failed to report until October 10th, when she said that she had been very negligent in taking the medicine. During August she did not take it, and had had terrific pain. During September she took the pills with some attempt at regularity, and had had less pain. The manganese was then discontinued, and she was given fluid extract of viburnum prunifolium until December, when she asked to have the manganese again as the pains were not at all relieved by the other preparation. During January, 1896, she reported that she had worked all through her last period. She was seen again in February, having passed through two periods, which were very satisfactory, although not free from pain. She was advised to take the manganese regularly after each meal and report occasionally. I heard nothing more from her until May 15, 1897, when she reported that she had taken the pills regularly until Septem-

ber, 1896, and that during all that time each period had lasted three days, with pain of three- or four-hours' duration on the first day. The periods regularly recurred every three weeks, but with little discomfort. During September she lost the prescription, and did not take any medicine for eight months. She was under excessive nervous strain and mental worry at this time, but had very fair menstrual periods, although they gradually become more painful, until in April her pains were almost as bad as formerly. She was told to take the manganese pills three times each day during at least a week before each menstruation.

I asked this patient particularly about the drugs she had taken before I saw her, but she knew nothing of them, except that one was antipyrin, as all had been given her by different physicians, and all had been failures. Though the manganese was not as great a success as I had wished, still it was far more efficacious than anything else that had been prescribed.

This young woman was endowed with a great deal of good sense and perseverance, which had been put to a very severe test by the failure of so many drugs, one after another. Fortunately, she was not inclined to be at all morbid or hysteric, but had concluded that it was her fate to have such menstrual pains. There are many, however, who are not so placid; who rebel constantly at each recurring epoch; who brood over their sufferings, looking forward with dread from one period to the next. Such women are readily thrown into a true hysteric state, become peevish and fretful, and altogether disagreeable to themselves and to those about them. They are recognized as having high-strung nerves which are readily disordered, especially at or about the time of menstruation. In such women vaginal examination frequently does not reveal anything to account for the trouble, and local treatment is more or less empiric. I have found manganese very efficacious in many such instances, and always use it when such a history is presented before resorting to vaginal exploration no matter how severe the symptoms may be, or how helpless the case may seem from a therapeutic standpoint. Indeed, I consider these the most brilliant successes from this treatment. The whole train of nervous symptoms follows the pain, exciting reflexes in an individual already prone to develop such symptoms under the stimulus of pain, and rendering the system less and less able, with each monthly recurrence, to bear up against its disorganizing effect. The pain shatters the nervous equilibrium, which condition makes its endurance less possible; in effect this condition of the nerves increases the pain, from the sufferer's standpoint. This unfortunate sequence goes on month after month, with in-

creasing effect until the woman is reduced to a condition bordering upon insanity, and is ready to do anything for relief, even to sacrificing her ovaries at the suggestion of the operating gynecologist. I have seen a number of just such patients promptly and effectually relieved by the administration of manganese, so that the pain would never return as long as the drug was taken. The following case is an instance of this:

CASE IV.—M. M., aged twenty-five, unmarried, consulted me March 19, 1895. She was a very well-developed girl, who showed no apparent sign of illness. She worked at sewing of some kind, in a factory, which was not hard work, but confined her to a work-room, and to a constrained position at her machine. She had grown up in perfect health, and had been very strong and vigorous during her school days, being full of play and able to hold her own in any rough sport. Her menses began at the age of seventeen, lasted four or five days, and were at first entirely painless. About three years before I saw her she began to experience trouble with her menses, which began with slight pain, and fretted and irritated her. Gradually she had more pain each month until she felt as though death would be a welcome relief. During the previous six months she had been constantly at such a nervous pitch that it was almost impossible for her to work, and she felt that matters were rapidly approaching a crisis. She had not yet visited any specialist, but had been freely dosed with household remedies, chiefly whisky and ginger. From these she obtained a slightly stupefying effect, but no actual relief. I prescribed pills, each containing 2 grains of black oxid of manganese and 1 grain of dried sulphate of iron, one after each meal. I did not see her again until May 4th, when she reported that after the first few days she had improved. Her nervousness became less, and she was able to look forward to her menstrual epoch with less anxiety than formerly. She menstruated March 25th, and again April 19th. Both periods were perfectly natural and free from pain, even the nervous excitement which usually accompanied them being entirely absent. She felt just as she did formerly, before the advent of the painful experiences. She continued to take the pills during the month of May, and reported that her period at that time was painless. During June she neglected to take the medicine but had a very good period. She was warned of the imprudence of this neglect, and she began taking the medicine again, continuing it regularly through her July period, which lasted five days, and came on so painlessly that she was not conscious of it, and continued regularly and easily throughout. Better even than the absence of pain was the improvement in her general condition. Instead of the nervous, hysteric woman that she had become, she has again returned to her former excellent physical and mental health. She works regularly, and with little distress, and is in every way a different woman. She

feels that she has in her own hands a remedy which will keep her well if she uses it.

This is but one case taken at random from many which might be cited in favor of the use of manganese in such instances. The whole picture of the case of this girl is just such as gives pretext in the hands of advanced gynecologists to prolonged local treatment, often resulting in some serious operation; yet all the symptoms disappeared promptly and finally soon after beginning the treatment suggested, and never returned as long as it was continued.

I have had this experience too often to think it an accident. In equally trying cases I have again and again been able to give relief with manganese after many other drugs had been unsuccessfully tried. I do not pretend that manganese will relieve every case of dysmenorrhea, nor, indeed, that it is the only drug which will relieve it. I have often failed with it and obtained relief from the use of other drugs afterward, but I feel convinced, after years of patient and persistent study of the therapeutic aspect of dysmenorrhea as it occurs in young girls and unmarried women, that we have in manganese a remedy which, in many cases, will give relief from the severe and distressing train of symptoms usually accompanying dysmenorrhea, without recourse to any further treatment, thus sparing the woman, already nervous, perhaps hysteric to a high degree, the added anxiety of useless vaginal manipulation. With such a fact before us I feel that no unmarried woman who complains only of dysmenorrhea should be subjected to a digital or instrumental examination for the purpose of diagnosis until she shall have taken a full course of manganese during at least three months, taking 1, 2 or 3 grains of the black oxid three times each day during that entire period, the size of the dose depending upon the ability of the patient's stomach to retain and assimilate the drug. If such treatment could be faithfully carried out I believe that many women would find in the use of these harmless pills the relief which they do not receive from local procedures, and many more would be spared the necessity of any other treatment whatever.

In some instances the effect shows itself remarkably at the first succeeding menstrual period; in others, a longer time is required; in none would I feel that a fair trial had been given until three months had passed; not until then would I consider the propriety of making further examination. In cases of anemia or chlorosis it is well to combine iron with the manganese, but there are many cases in which a need of iron is not at all indicated by the appearance of the woman, and yet relief from severe menstrual pain is

obtained through the use of manganese. Such experiences teach that there is something in the latter drug which acts, apart from the iron, even in anemic cases. I believe it to be an excellent adjuvant to iron in the treatment of constitutional anemia, but in the treatment of the dysmenorrhea of anemic subjects I believe that the manganese plays the important part and that the iron is the adjuvant.

One word about the administration of the drug. Some women experience considerable difficulty in taking it because of a very delicate stomach, which rebels against it. For this reason it is well to begin with a small dose, say 1 grain at a time, and gradually increase it. I have given 5 grains three times a day during several weeks without any ill effect, but experience has taught me that 3-grain doses will do as much good as a larger quantity, and that failure with that much cannot be changed to success by increasing the dosage. Often it is unnecessary to give even that much, but it may be properly pushed to this limit in doubtful cases.

A NEW METHOD OF GENERAL ANESTHESIA.

BY M. L. MADURO, M.D.,
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THE dangers of the administration of the general anesthetics now in use, *viz.*, ether and chloroform, have been too often discussed since their introduction, but up to now no one has succeeded in solving the problem whereby their disadvantages may be eliminated or lessened. With this object in view a new method has been given to the world which has stood the test of practical application, and has demonstrated, to the minds of many of our distinguished colleagues abroad, all that is claimed for it. The discoverer is best known to us through his original work in the domain of local anesthesia by the infiltration method. I refer to Schleich of Berlin, whom it has been my good fortune to meet recently, and thus be placed in a position to relate what he claims for his discovery.

It is now some two years since Schleich began making original investigations and experiments upon animals in the field of general anesthesia, and his results culminated in the production of a book which was published some six months ago, and was well received by the German members of the profession.

All anesthetics act in small doses as excitants, in large doses they induce sleep, and in the largest doses cause death. It is clear that a narcotic which rapidly evaporates is rapidly eliminated by the respiratory organs, and one which does not evaporate as quickly remains longer in the system and becomes more dangerous with prolonged inhalation. It is acknowledged that a body evaporates more rapidly

the lower its boiling-point, and *vice versa*. The question arises: What is the relation of the boiling-point of the various narcotics to the temperature of the organism by which they are absorbed? It must be admitted that a narcotic with a boiling-point of 15° C. (ethyl chlorid) or one which boils at 65° C. (chloroform) must act in different ways upon an organism the temperature of which is 38° C. Schleich, knowing that there ought to be an intimate relation between the boiling-point and the temperature of the body, undertook experiments to discover by a physical process a mixture which would satisfy this relation and materially lessen the dangers of general anesthesia. He found that when the boiling-point is higher than the temperature of the body the amount necessary to narcotize is less than when the boiling-point and temperature are equal. Again, when the boiling-point is higher than the body temperature the deeper the resulting narcosis. The boiling-point of chloroform is 65° C.; of ethyl bromid, 39° C., and of sulphuric ether, 34° C. Thus, it may be understood why less chloroform than ether is necessary to narcotize, and why chloroform narcosis is deeper than that of ether. Schleich has proved that anesthesia with ethyl bromid, the boiling-point of which is 39° C. (nearest the temperature of body), would be an ideal anesthetic were it not for the fact that the advantage of boiling-point is not sufficient to overcome the dangerous action of the bromin.

After making various mixtures of the different anesthetics, Schleich concluded that it is possible to change the boiling-point to the desired degree, and that the mixture will continue to boil without decomposition as long as its temperature is not considerably higher than its determined boiling-point.

Mixtures of ethers, the boiling-point of which closely approaches the temperature of the body, absorbed during respiration will boil when expired with the air in the lungs. It is possible to mix ethers having different boiling-points in various proportions and thus obtain a desired boiling-point; and further regulate it according to the proportion of each used.

After various experiments upon animals, Schleich succeeded in preparing the three following mixtures which constitute the new method:

Mixture I. (Boiling-point, 38° C.)
Chloroform, 45 parts.
Petroleum ether, 15 parts.
Sulph. ether, 180 parts.

Mixture II. (Boiling-point, 40° C.)
Chloroform, 45 parts.
Petroleum ether, 15 parts.
Sulph. ether, 150 parts.

Mixture III. (Boiling-point, 42° C.)
 Chloroform, 30 parts.
 Petroleum ether, 15 parts.
 Sulph. ether, 80 parts.

The mixtures may be prepared by the anesthetizer. The only thing to remark in preparation is that the petroleum ether should have a boiling-point between 60° C. and 65° C. Schleich uses petroleum ether because he found in his experiments upon animals that no other ethereal substance can be administered in such large doses without causing serious disturbances. It, however, seems to mitigate the action of the chloroform contained in the mixture and to dilute the other substances without interfering with their action. The method of administration differs little from that commonly employed in giving other anesthetics, inasmuch as the greatest care in the amount used should be observed. Small doses will lead to slow but sure results. Enough stress cannot be laid upon this point which, as we know, is the common mistake in the administration of anesthetics. With Mixture 1, 30 grams should be an average dose for an operation lasting twenty minutes or less. Schleich has manufactured a special mask; but he has now discarded it, to use with equally good results the practical American idea of the paper-and-towel combination.

If a more prolonged operation is undertaken, a higher boiling-point is selected (Mixture I. or II.); for then the small excess which cannot be immediately eliminated with the expired air will induce a profound sleep with a very small dose. With this method one can regulate the narcosis by the respirations alone. Schleich is enabled to have his patients who are only under a brief narcosis immediately awake after the completion of the operation; for if Mixture I. is used (boiling-point equals temperature of the body) only a few free respirations are necessary to awaken the patient.

After having witnessed quite a number of operations at Schleich's clinic, I was amazed at the rapidity with which the patients both succumbed to and recovered from the anesthetic. A response to a question could be elicited immediately after the mask was removed from the face. Laxity of the abdominal muscles was complete after an average of five-minutes' narcosis. The stage of excitement was generally absent, even in alcoholics. Cyanosis or nausea were never present. Vomiting occurred about as frequently, never more so, as with the use of chloroform. There was no salivation or bronchitis.

Schleich relates a case of bronchopneumonia in a child who previously had had diphtheria, and whom he had occasion to anesthetize. The child was not made worse, but recovered completely from the an-

esthetic within forty-eight hours. In febrile cases, narcosis has been induced without any resulting disturbances when the 42° C. mixture was used. The pulse was always of good tension, never increased, and sometimes decreased. After the employment of this method of anesthesia patients awaken more refreshed than after the administration of ether or chloroform.

Schleich has, up to the first part of this year, collected some 360 cases in which he has used his method of narcosis with uniformly good results. All that he claims for it has been upheld by many of his associates abroad. There is little or no doubt in my mind that this new departure in scientific up-to-date anesthesia will revolutionize the old methods, and will prove its efficiency by its general adoption in the near future.

A PHASE OF THE TREATMENT OF GOUTINESS.

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THE subject of lithemia has been presented with thoroughness and vigor by many able internalists, and yet it has never received the attention which its importance demands. Those who have studied its literature during the past five years, and have intelligently applied the principles therein laid down are enthusiastic as to the real advances which have been made. Many hitherto unexplained and inexplicable symptoms and conditions yield as if by magic, and the result is not only a relief from long standing disability, but as well, the acquisition of clearly-cut ideas as to diagnosis and treatment on the part of the physician.

While we are not prepared to abandon the term lithemia, yet perhaps it is well, pending a more widely diffused knowledge of the significance of the term, to substitute for it the word goutiness, which is more suggestive to those who hold conservative opinions, and is supported by the authority of Ewart. Satterthwaite's classification divides lithemia as follows: the hepatic (dyspepsia), the neurotic (neurasthenia), and the arthritic (gout). Further, it must not be forgotten that uric acid, whose rôle in the causation of morbid conditions has been so convincingly proved by Haig, is not all of lithemia, nor of uric-acidemia: else leucocythemia must be included in the consideration of goutiness. Indeed, the fact cannot be safely ignored that many instances of what is popularly designated as chronic rheumatism are, properly speaking, forms of disease resulting from uric-acidemia. As for acute polyarticular rheumatism, modern

investigation warrants us in considering it to be of bacterial origin.

Then, making use of the term "Goutiness," as Ewart as defined it (as being synonymous with the conditions of imperfectly declared gout, not necessarily associated with definite structural change, although such may also be present in a minor degree, and usually consisting of varied functional disturbances of a general character which cause many clinical symptoms), we may differ with him in that uric-acidemia, although a declared pathologic condition, should come under the head of goutiness. After these considerations the title of this paper may seem to be appropriate, and more especially, as it is intended to cover but one aspect of the question, namely, the neurotic form so often discussed under the symptom-complex of neurasthenia. That this condition should be succinctly present is evident from the following instance which came under observation about five years ago:

CASE I.—An officer in the navy became incapacitated for duty. His habits were beyond reproach. He was emaciated, pallid, and appeared at least ten years older than he actually was. About every ten days to two weeks he would be absolutely incapacitated by violent attacks of headache, which continued from two to five days. During two or three days he would be depressed in spirits, suffer from inappetence, perhaps be constipated, and be disinclined to mental or physical exertion. Beginning with the afternoon he would suffer from slight vertigo, "crinkling before the eyes." Pain, resembling migraine, with pallor of the face, would assert itself, nausea would follow, and finally, he would be forced to go to bed. The whole gamut of migrainous symptoms would be run; pallor, later flushing of the face; temporary blindness, followed by throbbing temples; lightheadedness, with specks before the eyes; and, as a sequel, nausea, vomiting, and purging; heavy urine, diminished in quantity, with brick-dust sediment, would be followed by a copious flow of clear urine, resembling that of hysteria; forcible palpitation, precordial pain, dyspnea, and later, fluttering of the heart as a preliminary to tachycardia. During the first stage the patient would be melancholic, suspicious, jealous, and irritable. He would give way to fits of temper without cause. The future had nothing in store for him, the past was a failure, and present existence a torment. His heart was believed to be affected, and he underwent an operation for hemorrhoids without an anesthetic. He was believed to be dyspeptic, and his diet was limited until he became emaciated. Since mucus was a frequent and important constituent of his stools, he received cathartic medication in great variety. Finally, he was retired in the belief that his disability was permanent.

A careful physical examination revealed that the only disturbance referable to the heart was a slight hypertrophy of the wall of the left ventricle. The

pulse evidenced a high degree of tension. The liver could be felt below the free border of the ribs, the edge rounded and more than normally resistant. The abdomen was tender, somewhat distended, but otherwise normal. The urinary examination showed an acid urine of high specific gravity, a trace of bile, but no albumin, glucose, or casts. The relation of urea to uric acid was greater than thirty-three to one. A strict regimen of meats, green vegetables, excess of water between meals, regular evacuation of the bowels obtained by means of sodium phosphate, after preliminary purgation with calomel, resulted in relief of all symptoms within three months, save that his periodic headaches, although less severe, continued. The coal-tar analgesics administered at the time of an attack had little effect; the nitrites given during the spastic stage cut it short, but the secondary congestion was intolerable; opiates were out of the question. A weak convex glass for manifest hyperopia was worn with comfort, but did not relieve the headache. After several months, during which the condition remained about the same, the use of piperazin water was suggested. This was administered during an attack, and the patient managed to keep about instead of taking to his bed as formerly. The first time that premonitory symptoms appeared one bottle was taken each day three days in succession with the result that the attack of pain was the mildest he had experienced in many years. By giving this remedy as soon as the uric-acid elimination fell below the normal he was enabled to live in comfort, still, however, adhering to his diet and regular life. After some months he engaged in active business, and has so continued with success as to results and comfort to himself.

As this was the first of my using the "water" and as I had not obtained good results from the use of piperazin alone, I was led to quote Haig in my address upon lithemia before the Medical Society of the State of New York in February, 1893, in which I said that "it was not a powerful excretant and could not compare with the salicylates," adding that "I had only found it of use when, in the treatment of neurasthenia, it was combined with large doses of phenacol hydrochlorate."¹ The brilliant success achieved in this instance led me to continue my investigations and finally to believe that I had solved the problem of the management of neurotic lithemics, which hitherto seemed to present insurmountable difficulties. The use of a meat diet, then advanced in my paper, provoked adverse criticism. When, however, we consider, that the so-called vegetable diet is not only one of starches, sugars, and fats, but as well of vegetable albumins (gluten), it is apparent that the distinction between an animal and vegetable diet is one of terms rather than of facts. Further, when it is generally known that the

¹ *Transactions of the Medical Society of the State of New York*, 1893, page 321.

vegetable albumins are of far greater difficulty of oxidation than those of animal origin, and, since lithemia is largely dependent upon imperfect oxidation, the reason for the use of a meat diet is clear. The practice then advocated has been adhered to with the most satisfactory results, not only in affording relief to patients afflicted with goutiness, but to those with well-marked gout who had been treated, *secundem artem*, by the classic methods. While uric-acidemia is a constant factor in both gout and goutiness, we must, as careful observers, admit that there is something else of enormous importance. It hardly aids in the solution of the question to add imperfect oxidation; it simply advances the problem another step. Since it has been conclusively shown by Haig that migrainous attacks are associated with a diminished elimination of uric acid, and that the end of the vasospasm is followed by a largely increased output of this substance, and, inasmuch as *in vitro* piperazin is an excellent solvent of uric acid, we have a logical remedy for the pathologic condition. Inferentially, this drug should be of use in all conditions associated with deficient elimination of uric acid, and practically this is found to be a fact.

A striking example of this condition (neurotic lithemia) is shown in the following history:

CASE II.—A gentleman of middle age, somewhat corpulent, had spent two summers in Europe and two winters in the South for so-called nervous prostration. There was temporary relief following each vacation. He was a good liver but not a hearty eater. His habits were excellent with the exception that he smoked a number of cigars each day. He was prosperous in business and fortunate in his family relations. His sleep was disturbed by annoying dreams; he awoke in the morning unrefreshed, and rarely slept more than three to five hours. He was irritable, depressed in spirits, and unreasonable; the physical examination revealed an unusually healthy man as regards the respiratory and circulatory systems. The liver was slightly enlarged and tender; the abdomen somewhat distended, and tympanitic; conjunctivæ jaundiced. During January of this year a urinary examination showed absence of albumin, casts, and glucose. There was a trace of bile; acidity high, and the total amount of urine was 935 c.cm., and contained .312 gm. of uric acid, and 25.2 gms. of urea. Thirty grains of potassium acetate was given at 10 P.M., in the hope that the normal morning alkaline tide would be increased. Sodium phosphate was ordered, dissolved in hot water, at bedtime, in sufficient quantity to produce an easy evacuation of the bowels. The diet and the exercise were regulated according to the principles laid down in the address previously mentioned. Ten days later the urine was found to be 2825 c.cm. in quantity, which was exceptional, and it contained .334 gm. of uric acid, and 28.2 gms.

of urea. The sodium phosphate was continued and piperazin in 20 grain-doses was given at bedtime. On month later the amount of urine was found to be 1800 c.cm. containing .346 gm. of uric acid, and 29.3 gms. of urea. The patient's ability to sleep was somewhat improved and the morning exhaustion was not so much a subject of complaint. To the dose of piperazin 30 grains of phenocol hydrochlorate was added, and the patient spent nearly two months in the South, returning considerably improved. The urine was now 1920 c.cm. in amount, and contained .501 gm. of uric acid, and 25.1 gms. of urea. The constant dreaming was now lessened, and there was marked improvement as regards irritability and depression of spirits. He was directed to take one bottle of piperazin water during the evening. Five weeks later the urine was 1650 c.cm. in amount, and contained .572 gm. of uric acid, and 24.6 gms. of urea. He now went to his country residence for the summer, coming to town each day for business, and at present reports that he sleeps with but little dreaming, awakes refreshed; everything is bright and cheerful, and he feels able to attend to his business in a satisfactory manner. The last report of urinary condition was: quantity, 1810 c.cm.; uric acid, .629 gm.; urea, 24.2 gms. It is a curious fact that in spite of the low coefficient of uric acid during the earlier part of his treatment he never suffered from headache nor from neuralgia.

The following is an instance of a common error in diagnosis:

CASE III.—A young man engaged in a literary occupation became incapacitated. He was finely educated, brilliant, and cultivated. During May of last year he collapsed mentally and physically, presenting the symptoms generally ascribed to neurasthenia. He was treated in a sanatorium for eleven months, running the gamut of the rest cure, massage, electricity, baths, packs, and vegetable diet. At the end of this time he was just as unable to endure mental or physical fatigue as when he commenced the treatment. He had, however, gained considerable flesh. On examination, during April of this year, he was found to be sallow, and lethargic. He complained of constipation, and of but little appetite, abdominal distention, dull headaches, and inability to think or do anything requiring thought. The physical signs were those of an enlarged liver, gastro-intestinal dyspepsia, and the neurotic type of lithemia as regards heart and nervous system.

FIG. 1.

Pulse-tracing illustrating the circulatory condition. (Case III.)

The urine was 1120 c.cm. in amount, containing no albumin, casts, or sugar, but a trace of bile, and .336 gm. of uric acid, and 27.1 gms. of urea. A system of purgation was begun with $\frac{1}{10}$ -grain of calomel at hourly intervals until a free movement was obtained each day, and this necessitated the occa-

sional use of Kissingen water. This was continued ten days, during which time the movements would have recalled the older descriptions of inspissated bile. The usual diet was ordered, with a considerable amount of water between meals. A Turkish bath was taken every second or third day. At the end of this period the patient slept much better, and felt refreshed when he awoke. The skin had lost some of its sallowness, and the mental depression was less. During the next ten days gastro-intestinal fermentations were inhibited, first with resorcin and later with bismuth naphtholate. The piperazin water was prescribed in bottle doses, to be taken between dinner and bedtime. At the end of this time the urine was 1640 c.cm. in quantity, and contained .496 gm. of uric acid and 26.2 gms. of urea.

FIG. 2.



Pulse-tracing. (Case III.)

At the present time the patient sleeps six to eight or nine hours each night, and awakens refreshed. He walks several miles daily, reads the newspapers, and takes interest in his surroundings. For the next month the piperazin water was continued; a weekly series of calomel powders were insisted upon. His diet was now made more varied, and increased in quantity; bicycle riding was encouraged. At the end of five weeks the urine was 1725 c.cm. in quantity, and contained no bile; uric acid, .550 gm.; urea, 25.3 gms. The following pulse-tracing shows a distinct gain:

FIG. 3.



Pulse-tracing. (Case III.)

At the present time the patient can easily ride fifteen miles per day upon his bicycle, eat articles of food which he has not ventured to ingest for years, and can digest them better. He sleeps quite well, has regained his intellectual vigor, and is in a fair way to attain his former standard of physical strength.

The purpose of this paper is to point out that a very considerable number of so-called neurasthenics are really patients who are suffering from goutiness of the particular variety known as neurotic lithemia. It is a notorious fact that these patients are cured with difficulty, notwithstanding that they are curable. The clearing of the mental atmosphere of depression as soon as the stored uric acid is set in motion toward excretion is remarkable. Further, since it is not the excess of manufactured uric acid, but rather its deficiency of elimination to which the symptoms are due, and in addition, that a vegetable diet contains albumin of a variety which is difficult of oxidation, renders the prohibition of red meats an illogical procedure. Piperazin *in vitro* has been proven to be an efficient and harmless solvent for

uric acid. Administered with phenocol, better results are obtained than when piperazin is alone employed.

So far as my knowledge goes piperazin water is the method of choice for the administration of this drug, because perfect solution in proper dose and quantity of menstruum is obtained.

It may then be concluded: (1) That uric acid, as a causative factor in neurotic lithemia, a form of goutiness, should not be overlooked. (2) That a limited meat diet is productive of good results. (3) That piperazin administered in the form described in this paper is the remedy of choice for the elimination of uric acid, not only in this, but in other pathologic conditions dependent upon the same cause.

WATER PURIFICATION HYGIENICALLY CONSIDERED.

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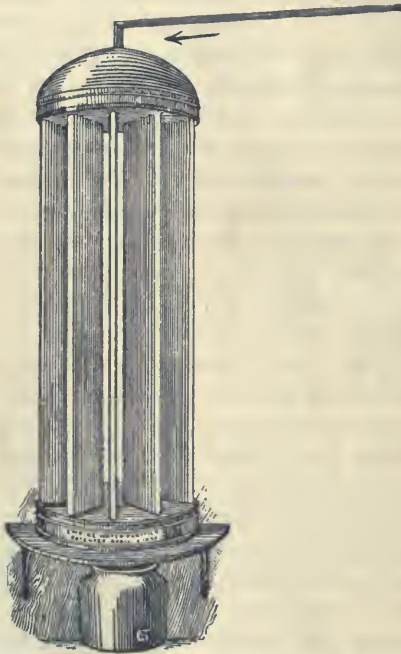
(Continued from page 658.)

THERE are localities, notably in desert regions, where the available supply of good drinkable water is so deficient that the providing of distilled water in large or in small amounts is a hygienic necessity. Aden (steamer point), on the Arabian coast, affords an instance where large evaporators of American and other types are employed for supplying water. Especially when the apparatus uses an exhaust pump is it important to test for the presence of lead contamination or its probability. In our western mining regions and in certain grazing districts in the "Great American Desert," water is often so impure and unpalatable as to require distillation in order to be rendered fit to drink. When the supply is copious enough to permit an abundant flow of cold water for keeping condensing-coils or plates cool, use may be made of the common form of glass or tin spiral tube connecting tightly with a large closed kettle or vessel in which water is kept boiling. The resulting steam goes out of a small opening into a long pipe, which rises at first and then, like the coil into which it conducts the steam for condensation, descends gradually. The spiral tube or coil is fixed in a pail of freely wasted cooling water, and conducts its condensed steam as distilled water outside by passing through an opening on the side of the pail. By bending this distilled-water tube upward and then downward so as to form a siphon after it emerges, contamination by leakage of the cooling waste water is obviated. Such a primitive arrangement produces distilled water that is sterile if only the inside of the condensing-pipe be sterile beforehand. So too do tinned copper drums or pipes through which water is

condensed from steam in an automatic way, the air outside these large-surfaced conductors cooling them sufficiently to secure condensation. Attention is needed only to keep boiling water in the kettle. The joints should be quite tight.

During the last ten years the writer has seen various adaptations of this principle of using cool air for condensation, and those which he has tested have proved capable of yielding wholesome water, free from bacteria and mineral matters, except that lead has been evident when even a little solder has been used for the joints. This is especially the case when the apparatus is new. If such a faulty new condenser must be used, the first few gallons ought to be wasted, and also some after disuse. Tests show that it is safer to tolerate a small leakage of steam from a well-made condenser than to use solder, instead of tin and the blow-pipe, for stopping it. The accompanying illustration (Fig. 5) shows the appearance

FIG. 5.



Domestic condenser. Arrow indicates direction of inflow of steam. Distilled water flows out at base.

of a domestic condenser of the most effective kind. These are usually made as a series of drums communicating by short pipes with tight joints, as illustrated by Sears in the *New York Medical Record*, March 21, 1896. Practically the same idea is embodied in a subsequent model used for the "400" still, which has a cooling surface of over $1\frac{1}{2}$ square meters. These stills yield from a quart to a gallon per hour, according to their size, and somewhat according to the outside temperature and the way they are worked. The steam kettle may be heated on a stove, but a

more constant heat can be obtained from a central-draught "mammoth" lamp or an "oil-gas" stove or a gas-stove. When gas is supplied under sufficient pressure, and when water abounds for cooling the steam, a still of the Jewell pattern or the "Domestic" style can produce a gallon or more per hour. The writer has used the latter kind during the last nine years, and found it satisfactory. There are various American and foreign domestic stills employing a comparatively small tinned surface for condensing, and flowing water is used (and also ice) for cooling this. They are generally less satisfactory than the styles above indicated, although they produce distilled water of fair quality.

Chemicals, in which class may be included alcohol in beverages and also the employment of electricity in any form or adaptation, are not to be recommended or relied upon for ordinary practical sterilization of drinking-water. It is true that various reagents of this class if acting in sufficient strength and for a sufficient length of time are capable of destroying bacteria in water. We know that, by admixture of just the proper amount of certain chemicals, foul water and even sewage can be clarified and even sterilized. The importance of the skilful use of quicklime under certain conditions for the removal of organic matter or for lessening the amount of lime already present, is recognized. Like alum, iron, or similarly acting coagulants, it has a distinct utility when indicated for the purification of bad waters, but the use of these chemicals, or of permanganate of potash or such chemicals as bromin (urged by Schumburg), or any others in sufficient quantity to produce immediate sterilization of bad water in all cases, may make it anything but wholesome or palatable. Boiling is in every way more reliable and therefore preferable.

It is quite possible with time to produce, under laboratory conditions, the death of all the bacteria of a given sample of water, or at any rate cholera bacilli, if even so mild a natural acid as lemon juice is added to it. Stronger agents are of course more potent, but it is unwise to recommend that such uncertain means be relied upon by the masses in time of epidemic. Some abominably tasting and rather harmful drugs are at times thus advised without giving the authority and without retraction. Even in serious technical literature fallacious statements of assumed fact are encountered. Thus, Traube asserted that a minute amount of lime chlorid sterilized water. Although obviously erroneous, the statement attracted some attention because of the high character of the organ of publication. Various tests showed that at least thirty times as much as the amount specified was needed. To sterilize bad water in ten minutes one must use of lime chlorid no less than 15

parts to 100,000 parts of the water. Even more may be required if the water contains much organic matter, for that takes up the chlorin so rapidly as not to leave enough to act on the bacteria. The lime chlorid is not easy to dissolve and a sufficient quantity may make the water very hard as well as cloudy, thus necessitating filtration. So, too, the alum process urged by Babes was proved to be inadequate. Although in some cases 4 parts of alum to 10,000 parts of water prevent increase of bacteria, the writer determined from repeated experiments that under practical conditions even this considerable amount could not always be relied upon. Peroxid of hydrogen acting, like ozone, because of its contained active oxygen, if in the proportion of 1 part to 1000 of water, sterilizes it in twenty-four hours, but when organic matter is present this agent is not to be relied upon. All such agents act in too complex and uncertain a way to be comparable with boiling.

Electricity deserves mention chiefly because of the prominence which has been given to it. If conducted through water, a dissociation of the molecules into the component hydrogen and oxygen occurs, the latter being set free at the positive pole, and it can exert a destructive influence upon bacteria, especially in sunlight or strong daylight. This affords an interesting laboratory demonstration, but it costs too much for ordinary employment and is otherwise impracticable. Electrolysis of common salt, present in water, causes the salt to break up into sodium and chlorin. These tend to recombine and one of the products is chlorinated soda, just as chlorinated lime results from electrolysis of lime chlorid. By reason of their available chlorin, these resultant salts are powerful disinfectants and are known to be destructive of bacteria if enough of the fresh, powerful chemical be present, but this is merely a chemic action and no other and subtler force than the chemic products are operative in the process. Because of obvious uncertainty as to the exact quantity of these evolved chemicals when they are introduced in this indirect way, it is preferable that they be added in a precisely known quantity. This is also the more economical way, although the use of such chemicals cannot be regarded as a desirable means of sterilizing drinking-water.

It should be mentioned that when lime is used in the largest permissible amounts to clarify sewage, the effluent water is almost never free from bacteria, and in no case is wholesome even if used at once. If stored or poured into a river, its alkalinity favors the growth of algæ and other forms of water vegetation. The effluent from a properly managed sewage-farm is much more suited for admixture with water

of streams that further on are used for water-supply. Natural filtration by the soil or efficient artificial filtration must be considered—like boiling—as vastly superior to chemic and electric means of sterilizing water. Any insoluble substance in minute particles, which is clean and just heavy enough to sink slowly in bacteria-laden water through which its innumerable grains or flakes are diffused, will in settling carry down a considerable percentage of the bacteria. Even rapidly sinking particles, such as grains of sand, can experimentally be shown to produce this result to a certain extent although less completely than particles which settle more slowly. The gelatinous sediment resulting from the addition of alum or other coagulant is very effective in this respect. So, too, on adding fresh lime and also soda to reduce the hardness, the fine resultant precipitate in settling causes many bacteria to sink with it. But this removes only a portion of the bacteria, for it is a mechanical removal and not a chemic action, unlike the total destruction caused by adding an excessive amount of fresh lime or other strong chemic agent.

Hardness of water varies according to the amount of lime and magnesia salts present. Distillation of water, heavily charged with these or other salts, yield a product free from them, and is eminently necessary in exceptional cases in which not only these, but sodium and other soluble salts abound in the only obtainable supply. Ordinarily, however, it is too expensive, costing much more than a cent per gallon. Of the salts which render water hard, carbonate of lime is most common. This is kept dissolved by the carbonic acid present, which is driven off by boiling. Boiling, therefore, causes most of the carbonate to become insoluble, and to separate as a precipitate. This portion thus removable is called "temporary hardness." The same result is obtainable by adding water-slaked quicklime in proper amount, estimated according to the degree of temporary hardness. If there be 20 parts of this to 100,000 parts of water (which is more than can well be tolerated for all domestic and industrial purposes), about 11.2 parts of fresh quicklime are required to counteract it. This, the so-called Clark process, can be accomplished rapidly by the aid of several styles of more or less effective apparatus that agitate and aerify the treated water. Ordinary mechanical filters are also introduced into the process, or water may be allowed to settle in a tank for hours after the quicklime, wetted with four or five times its bulk of water and this still further diluted, is well diffused throughout the entire volume of the hard water. After a day or less of settling, the clear water may be drawn off, or the whole filtered. As above explained, the process reduces the percentage of bac-

teria and organic matter also, as well as the greater part of the lime (and magnesia) carbonate.

As a check upon the addition of an excess of lime, a solution of silver nitrite is recommended. If a little of this be added to a sample of the treated water and a brown precipitate results, it indicates that no more of the lime solution is needed. For each part of sulphate of lime and magnesia ("permanent hardness"), 2.86 parts of fresh sal-soda are required to counteract it.

Springs and wells are fed from the vast quantity of water, usually very free from bacteria, that is present in permeable ground underlain by impermeable strata. Artesian-well supplies have, in addition, an impermeable stratum overlying the water-bearing strata. This supply is derived from rain and snow precipitated upon and sinking into the earth, perhaps a great distance away, and is termed ground-water. It flows along several feet a day, seeking its level toward streams and bodies of water.¹

When intercepted by rocky or other barriers which are impermeable, or nearly so, it tends to flow out as a spring, which, if favorably situated, is free from bacteria, as the water flows from the ground, because of the slow flow through an immense mass of soil that furnishes the most perfect of filters. If into fine, porous soil, well situated, we drive a perfectly clean tube, water similar to that of a pure spring is obtained. The supply remains free from bacteria so long as they are not introduced by contamination from above. Practically the same result, or nearly as good, can be obtained from a carefully dug well in a favorable spot, yet if a well be not properly curbed, covered, and cared for, dirt and bacteria are certain to enter it, and altogether too often prove the source of disease. Unclean buckets, failure to conduct off overflow (waste) water, filth carried in by rain, wind, general carelessness, and especially nearness of privies, barnyards, and other obvious sources of filth, account for the most frequent unsanitary impurity of well waters. Topographic peculiarities, including flaws in the formation into which the well is sunk, account for some contaminations. All germs of disease ought to and by due care can be prevented from entering.

Wells may be regarded as large pipes surrounding an excavation in water-bearing ground and filled to a varying height with water from this cool source. If only unpiped holes in the ground, they are not hygienically complete. If, then, this pipe, covered on top, has an impervious wall tightly fitting in flawless soil and carried up at the top so that no surface washings can be introduced, unless filtered

by at least eight or more feet of fine, close soil, disease bacteria cannot enter. Then all water, however it may vary chemically because of lime, iron, nitrates, chlorids, or what not else, enters only at the bottom through the perfect filter of the fine soil, and so is practically free from bacteria. The immense majority of observers agree upon this point, although occasionally some one comes forward with a statement to the contrary. An eminent biologist has recently reported finding bacteria in deep-driven well waters, but fails to explain that they, like those found by others under such circumstances, were due to contamination from above. Care should be taken during construction to see that the bottom of a dug well has no flaw of the rock or soil to allow bacteria to enter in that unusual way. The well being dug in a place free from danger of contamination of this sort, attention should be paid to the absolute prevention of direct pollution from the surface, which is the source of infection in almost all the cases in which well water causes typhoid and other water-borne disease.

From the lowest part of the wall of the well-shaft, or at least from eight to ten feet below the surface of the ground, there should be a continuous, water-tight concreted casing, and this should rise from one to three feet above the ground. If concrete pipes, two or three feet in diameter, be employed for the purpose they must be well cemented at the joints and loam carefully rammed in around the pipe up to the level of the joint before setting and fixing the next length, all being supported so as not to settle. The top should be protected by a locked or otherwise fastened cover, asphalted, so as to keep out surface or other waste water, insects, and other things. Lead should not be employed for the purpose. The ground should be graded so as to slope away from the curb. Pails and buckets are not to be used. If a pump be placed over the shaft, provision should exist for conducting off waste water. It is much better that the pump be away from the well and the small (two-inch) pipe used for the pump-connection be carried through the casing at least several feet below the surface of the ground by a hole tightly cemented or asphalted about its periphery so that it allows no leakage into the well. The pipe may usually with impunity be of lead if the water be quite hard, but well-tinned brass or copper is better. Tin pipe, practically free from lead, could until recently be bought for a little more than 16 cents per pound, and ought to be used more frequently. The common form of iron suction-pump is preferable to the endless chain and wooden pumps which are used over very many wells.

As above indicated, wells which are properly con-

¹ See *The Am. Jour. of the Med. Sciences*, December, 1890.

structed and located many feet away from privies, barnyards, wash-water, and other sources of filth that in no case drain toward the shaft, afford healthful water, preferable to that from rain, storage, or any ordinary surface supply. It is usually from surface wash entering, owing to the lack of an impermeable curb, casing, and cover, that germs of disease enter a well and cause typhoid fever and other water-borne diseases. In this sort of pollution is included filth brought upon the boots of users to the cover of the well or to the ground near it and washed in, as by waste-water entering through a defective cover, or carried in by rain or by leaching in over the edge with puddle-water or drainings. Water from shallow, unprotected wells, which are not grossly faulty in this regard, is likely to be quite clear and taste better than that from deep waters which contain less oxygen, but which are usually much freer from bacteria. That deep protected wells receive much less of the only slightly changed organic and other chemic constituents of the soil which are carried down by heavy rainfall does not count for much hygienically, for it is particularly putrefactive and specific disease bacteria which cause shallow, unprotected wells to be dangerous.

Palmer of the University of Illinois, in a recent chemical report, has added to our great volume of instructive statistics concerning Illinois and other States, which show the unwholesomeness of water from such mere holes in the ground. He emphasizes the familiar fact that deeper wells in the glacial drift of the prairie regions are much less productive of disease, although the water is often unpalatable, not only because of lack of oxygen but also owing to presence of marsh-gas (due to decomposition of vegetable matters) and perhaps of sulphuretted hydrogen. Iron often adds to the unpleasant taste and appearance of such water, so that the senses are likely to mislead people to prefer an inferior product. This explains the slowness with which the unintelligent learn that it is of paramount importance to guard wells against surface contamination. In prairie regions where the ground lies perfectly level, the house well ought to be a hundred feet away from any privy or other filth, and slops and kitchen waste should be carried far from the locality of the well. When the ground slopes, it must be borne in mind that water seeks a lower level, hence the well should be so situated that the natural flow of the ground-water current is from the well toward any privy or other source of contamination and not in the reverse direction. The ground must be studied to prevent the location of all three of these near together in one common small basin or sink formed by impermeable underground barriers. Mere vicinity of well and house is not

necessarily dangerous if no privy or drain be near, and if no slops or other filth or surface drainage can leak into or upon the ground near by. The writer has made bacteriologic tests of carefully constructed wells adjoining, as also underneath houses with thoroughly cemented cellars, and found the water exceedingly pure and likely to remain so as long as no contamination entered; but it is invariably best to have such a source of drinking-water so situated that any one can always see that no carelessness ever introduces contamination.

Local inspection and survey always furnish the most important means of determining the absence of contaminating influence. The shaft of the well is best examined if illuminated, and when emptied the lowest parts can be inspected and flaws carefully searched for. Chemic and especially bacteriologic tests if repeated several times under varying conditions are of considerable value in this respect. For rough practical purposes an inexpensive test, substituting the lithium test, is afforded by throwing a suitable amount of saprol or some intense anilin red, dissolved in water, upon a neighboring filth pile or in the kitchen slop-water suspected of polluting the well. Common salt can be made to serve the purpose. Saprol is a low-priced coal-tar disinfectant of a very marked odor and taste suggesting illuminating gas or naphtholin and, if it penetrates to the water of the well, betrays its presence in a sample taken. To the taste it is perceptible when only one part is present in two million parts of water. The odor is evident when twice as much is present in the sample. If none of this substance be detected in the well after liberal application of it to the suspected filth, it is presumably safe to use the water. If saprol enters the well, further and more precise examination should be undertaken to determine the defect. When the water of a well is exposed to pollution which cannot be prevented, and the trouble is not remediable by the introduction of an impervious curbing and the other safeguards above recommended, the safest way is to fill up the well and make a proper new one in a good location. Koch's recommendation to convert a faulty well into a driven well by filling it up with sand and sinking a pipe in it is not practicable in most cases. At any rate, if this expedient be tried, thorough disinfection and cleansing should precede its employment.

In towns and wherever else it is available, steam driven in for two or three hours at a pressure of from two to four atmospheres is an efficient disinfectant. The leather valve of the pump is to be treated apart by soaking it for an hour in a 1 to 1000 solution of corrosive sublimate. After steaming has ceased, the water should remain in the closed well for nearly a

day and then be removed together with the dead frogs and other organic matter which, by subsequent decomposition, would become offensive, as would be the case after the use of lime or other chemicals. One portion of freshly slaked lime thrown in for every fifty parts of water proves an efficient disinfectant. It is cheaper than bromin or permanganate of potash and more satisfactory than the addition of one per cent. of sulphuric acid. Steam acts upon the entire well, while, when chemicals are added to the water, the walls have to be treated in addition. For artesian and other driven wells, Neisser recommends that steam be driven to the bottom of the tube by means of a small pipe sunk nearly to the bottom. Another pipe may also be introduced for the purpose of drawing out the water at the same time.

Ground water derived from carefully located gang wells and used promptly without being stored is usually very free from bacteria and other organic life. This is especially true when the territory which the driven pipes drain is reserved for a park and guarded from contamination. Such sources may in the end prove to yield less than the expected amount. If then, undue suction be employed to augment the flow of water, the results are unsatisfactory, and underground defects and partial stoppages of the pipes may be produced. When locating such a plant, bacteriologic tests are indispensable for preliminary determination of the quality of the water derived through sterile experimental tubes, samples being taken at different stages of the pumping. A chemic examination is also necessary for learning the amount of iron, hardness, chlorids, and organic matter.

Artesian wells usually yield water of great purity as regards bacteria, yet tests of the water from these deep borings sometimes show numerous bacteria other than those introduced from above ground through carelessness. The character of those found aids in determining their source. There are cases in which various forms of water-life have been carried long distances through coarse strata, and the possibility of contamination from the remote outcrop of the water-bearing strata, must be borne in mind. In those regions in which these deep wells have most frequently been bored, the distant outcrop is usually so situated as to preclude the likelihood of infection entering the water there. Considerable salt occurs in artesian well water in some districts.¹ With all their usual excellence as regards absence of bacteria, deep ground waters, even if the yield continues ample, proves at times too hard and contain too much iron to make them satisfactory, unless they undergo treat-

ment. Moreover, the sieves introduced on the lower end of the driven tubes for the purpose of keeping out sand, tend to become incrustated and thus greatly retard the flow. To remedy this obstruction, hydrochloric acid, diluted with nine times its volume of water, may be carried down to the bottom of the tube through a small pipe, and allowed to exercise its solvent action for nearly fifteen minutes, after which time it is pumped out.

Iron, so common in water from deep wells, may in some cases occur as phosphates of iron in part, but is usually in the form of free ferrocarbonate dissolved in the carbonic acid of the water. If this be driven off in the presence of air, or, if the iron water merely comes briefly into contact with air, the iron carbonate is thereby changed into insoluble ferric compounds; consequently, according to the amount of iron present, and the length of time that the oxygen of the air has worked, the water becomes opalescent, then gradually yellowish-brown, because of the innumerable minute particles precipitated, and which can be filtered out, leaving the water clear. Earthly alkalies present favor the separation of the iron. Any contrivance, such as a spray or an aerified filter, which causes the water to be exposed to the action of air will remove nearly all of the iron from a water.

Filtration, through from seven to ten feet of pieces of coke, gravel, or broken rock, one millimeter in size, with the utmost possible exposure to air, has been found in German experience to remove iron successfully. The slimy precipitate collects and the upper layer of the filter has to be cleaned every fortnight or so, and the entire mass needs renovating, or renewing every few months. Dunbar² has indicated a suitable mechanic sand-filter for use on a small scale. The Krölinke process for removing iron calls for the addition of ten parts of ferrosulphate of iron to one million parts of the iron water. Then from fifty to a hundred parts of lime (with water) are stirred in and the whole allowed to stand for twenty minutes before filtering. Hardness, as well as organic constituents, is also greatly lessened by this process, which at the same time separates most of the bacteria. Steckel's process, used in connection with an ordinary well, consists in packing a layer of lime, or, preferably, tribasic phosphate of lime, on the bottom and sides of the well, and fixing it in place so that the entering ground water passes through the lime, which remains efficient for years without removal. It greatly increases the hardness of the water, but removes iron.

For domestic use a bone-charcoal filter will attract and separate iron, lead, or other metallic impurities,

¹ An excellent monograph on "The Artesian Wells of Dakota," by Gilbert, is contained in the report xviii, 2d part, of the U.S. Geological Survey.

² *Ztschr. für Hyg.*, xxii, 68.

present in small amount in water which flows slowly through it. Even the ordinary carbon cylinders sold for filtering have some value in this way, although it must be remembered that they have the defects of all ordinary filters. If such filters become clogged by the iron slime, they may be renovated by soaking them in dilute hydrochloric acid. If such a filter be used as a makeshift, the cylinder may be covered with coarse sand, and the water aerified by dropping upon it from a height. Whether any of these or a mechanical filter be used for deferrating water, the main thing is to see that abundant exposure to air takes place.

Rain water, being precipitated moisture of the atmosphere, is very pure as regards the presence of lime salts and other things taken up by surface and ground waters. As ordinarily obtained from a roof, through a gutter and pipe, the first portion that falls takes up not only the soot, dust, and grass which may be in the air, especially of cities, but the washings of the roof and gutters as well. It is best that the first portion which falls be allowed to flow off, carrying leaves, bird droppings, and other dirt, the following portion then proving much purer. Automatic contrivances exist to effect this separation of the unclean first flow, but are not likely to prove popular. They are apt to work badly when leaves or other coarse dirt are washed in. When rain water is of necessity depended upon for a supply, the water-conductor should be kept shifted so that the water running down after rain has begun to fall will be diverted until after the dirt has been washed off, then the following water may very easily be guided into the cistern. In many cases this water contains very many bacteria, which thrive in the darkness and abundant organic matter. Boiling renders it fit to drink. The cisterns or tanks employed to hold water become foul if of wood, and should never have lead in any part, even for piping or cement. Bricks, well coated with hydraulic cement, are approved for cistern construction. Reservoirs of any sort need cleaning from time to time. Chemicals, such as above indicated for porcelain filter-tubes, serve the purpose of disinfecting these also. Steam is excellent when it can be applied.

SUMMARY.

Water may be very clear and palatable, yet at the same time may chance to be impure. As precipitated by condensation of vapor it is pure. Precipitated from the clouds and sinking into the earth's surface and other natural reservoirs it remains wholesome so long as bacteria capable of inducing disease do not enter it. Bacteria present in almost all natural surface waters remote from habitation are presumably harmless. Harmful micro-organisms tend to perish

or become innocuous in course of time after entering ordinary water, yet complex conditions may make the operation of this principle uncertain. If harmful bacteria are known to be present more or less regularly in a given supply, or if the entrance of sewage or other obvious pollution near an intake make its presence probable, it is most necessary to employ adequate filtration or other means of purifying water taken from that place. Distilled water is wholesome if it contain no lead. The receptacles in which this and various originally pure bottled waters are stored and transported are often bacteriologically unclean. Boiling, even for a moment, destroys the causative germs of typhoid fever, cholera, and other diseases known to be likely to occur in polluted waters. Ordinary small filters are usually quite inadequate to hold back disease bacteria or any others. All of them allow bacteria to multiply in the filtering substance and to pass through into the filtered water. Reported cases show that ordinary filters can harbor disease germs and cause disease. Small filters of very dense texture, such as the best porous porcelain and also the material used in the Berkefeld filter, can hold back all micro-organisms and thus yield absolutely sterile water for a limited number of days if intelligently cared for. None of these are permanently "germ-proof."

The only permanently germ-proof filter is the natural one formed by immense quantities of fine porous earth, through which "ground water" slowly flows. Filtration by well-managed large gravity filter-beds of fine sand approximates this natural process in efficiency, being capable of rendering the water practically pure. Mechanical filters can accomplish the same result, but are less likely to be maintained constantly in a condition of the highest efficiency.

Ground water, uncontaminated, is hygienically pure, under the conditions indicated above. In very many cases it is the best available source of supply. Free from bacteria as it issues from favorable ground, it frequently becomes contaminated because of carelessness. An outlay of effort and of money, usually much less than would be required for securing a pure surface supply, will eliminate the defect, which is commonly a local one. Open, shallow wells, unprotected from direct pollution by surface washings from privies and other filth, are a notorious source of pollution by, and dissemination of, the germs of typhoid fever and other diarrheal diseases, including cholera whenever and wherever that occurs. If properly located, and provided with a continuous water-tight casing and curb tightly covered, and if it has a good pump which does not necessitate an aperture above ground, even a shallow well can furnish wholesome water.

CLINICAL MEMORANDA.

REPORT OF TWO CASES OF GANGRENOUS PERFORATIVE APPENDICITIS.

BY F. SHIMONEK, M.D.,
OF MILWAUKEE, WIS.

CASE I.—George W., aged eleven years, was perfectly well up to the time of the present illness. December 3, 1896, he was taken with a pain in the abdomen which did not seem to be localized. There was some tenderness over the entire abdomen. The temperature was normal, but the pulse was somewhat exaggerated, being about 100 per minute. During the first day of the attack the condition remained the same. The next day pains were somewhat worse; temperature, 100.4° F.; pulse a little more rapid; bowels constipated, and there was some nausea and vomiting. Slight tenderness was present to the left and below the umbilicus, but no tympanites could be discovered. The bowels moved freely, which, however, afforded little if any relief. Early on the morning of December 5th, after an evacuation of the bowels, intense and cutting pain developed in the region of the bladder and to the left and below the umbilicus, following which the patient collapsed, but reacted within about twenty minutes. The temperature then rose to 102° F., the pulse to 130 or more. There was much pain and tenderness, and tympanites developed. The recti muscles were contracted. The facial expression became very anxious. The pain and tenderness were not situated over the appendical region at any time, but were rather to the left and below the umbilicus, which made the exact pathologic condition somewhat obscure. The subjective symptoms pointed to appendicitis with perforation and peritonitis.

During the evening of the third day of the attack abdominal section was performed. Because of the impossibility of locating the disease externally it was decided to make a median incision. The moment the finger was introduced into the peritoneal cavity it came in contact with a mass about the size of a chicken's egg, attached to the abdominal wall to the right of the median line, and before I was aware of it about two ounces of extremely fetid pus welled up in the wound. The small intestines were coated with a fibrinopurulent exudate, showing that there was present a progressive diffuse peritonitis. The omentum with which Nature had surrounded the appendix to protect the general peritoneal cavity formed the wall of the abscess, but it was scarcely sufficient to carry out this life-saving purpose. The appendix and omentum were separately tied off and removed. The peritoneal cavity was most thoroughly irrigated with about six gallons of sterilized normal salt solution, and carefully drained with long strips of iodoform gauze, reaching down into the cavity as far as possible. The appendix showed small perforations near the apex, and contained a hard concretion. The iodoform drains were withdrawn and the incision closed four days after the operation. Convalescence was uneventful.

CASE II.—Mrs. S., aged twenty-five years, nullipara, a hard-working woman who had always enjoyed excellent health. When first seen by me, thirty hours after

the beginning of the attack, she presented the characteristic symptoms of appendicitis. The temperature and pulse were both above normal; general condition good; very little or no tympanites; excessive tenderness over the region of the appendix, but no tumor could be discovered, either by abdominal or vaginal examination. The right rectus muscle was very rigid.

She was given a cathartic dose of calomel, and immediately after the resulting evacuation, excessive, cutting pain was felt in the hypogastric region, immediately above the mons veneris. The temperature suddenly rose to 103.8° F., and the pulse to about 130. Laparotomy was performed during the evening of the third day of the attack. A large quantity of very fetid pus was evacuated, and the gangrenous and perforated appendix with surrounding omentum removed. A large and hard concretion was found in the appendix. General fibrinopurulent peritonitis was present, and the small intestines were extensively covered with exudate. The peritoneal cavity was very thoroughly and carefully irrigated; it was necessary to use ten gallons of sterilized normal salt solution before the return flow became clear. Iodoform gauze was passed down to the bottom of the pelvic cavity, and the resulting drainage was excellent. The temperature and pulse rapidly dropped to normal.

On the fifth day the gauze was found dry, and therefore was removed, and since everything was found to be progressing favorably the incision was closed. Patient progressed nicely, temperature and pulse being normal until the fourth day, when on account of a slight rise of temperature it was deemed necessary to remove the stitches, fetid pus having escaped through the stitch-holes. The entire incision was reopened and a large quantity of extremely fetid pus washed out and a drain reinserted. The peritoneal cavity was now, however, found to be thoroughly walled off. The patient after some ups and downs finally made an excellent recovery.

These two cases prove that diffuse peritonitis is not always a bar to prompt and complete recovery. It has been stated that the presence of peritonitis complicating an attack of appendicitis is a contraindication to operation.

A CASE OF HYDATID TUMOR.¹

BY S. J. McNAMARA, M.D.,
OF BROOKLYN, N. Y.

A DESIRE to lend assistance to the keeping of accurate statistics of a rare disease prompts me to report the following case of echinococcus. But one hundred cases of this disease have been reported as having occurred in the United States, for the statistics of which we are indebted to Mr. H. O. Sommer of the Government Agricultural Department. In sixty-six of the hundred cases the echinococci had their habitat in the liver, in seven in the lungs, and in six in the bladder, the remainder being distributed through various other organs and tissues of the body. In one instance they were found in the tibia, and in another in one of the ventricles of the brain.

Mrs. P., Italian, aged thirty-one years. During the

¹ Read before the Kings County Medical Association.

past nine years she has resided in the United States, and for the last six years has been subject to epilepsy. Is the mother of five children, the youngest being two and one-half years old. Enlargement of the abdomen was first noticed sixteen months ago, until which time the general health had been good. She then became emaciated and gradually grew weaker, while the abdomen continued to enlarge until, just previous to operation, it equaled in size that of a pregnant woman at term, but with greater fullness at the sides. Fluctuation was marked. On opening the abdominal cavity, which was accomplished through the usual median incision, a large cyst presented. A trocar was unsuccessfully employed to draw off its contents. An incision through the wall of the tumor revealed the echinococcic character of the cyst with which I had to deal. It is not an exaggeration to say that thousands of smaller daughter cysts, light yellowish, limpid, and with very thin walls, rolled out until a foot-tub was three-quarters filled. The woman was relieved of twenty-six pounds of these daughter and granddaughter cysts, all of which had been contained in a single large cyst. The tumor had its attachment in the upper portion of the abdominal cavity, although it was impossible to determine its exact point of origin. A large portion of the omentum, which was studded with secondary deposits, was removed. As much of the main cyst as possible was also removed, and that remaining was sutured to the abdominal wall and a drain inserted.

The operation took place on the 26th of June and one month later the patient left the hospital. Four days afterward she had a miscarriage which, though not severe or dangerous in itself, in her weakened and already exsanguinated condition, proved fatal. During the last two weeks of life the hydatids multiplied to such a degree as to be detectable through the abdominal wall. After the operation and up to the time of the fatal issue the cyst remained open, and occasionally it was necessary to change the dressings five or six times a day.

AN ADDRESS.

SUGGESTIONS FOR THE FUTURE WORK OF THE SOCIETY.¹

BY ARTHUR MIDDLETON JACOBUS, M.D.,
OF NEW YORK.

FELLOW MEMBERS OF THE MEDICAL SOCIETY OF THE
COUNTY OF NEW YORK:

During a membership of more than twenty-one years I have received many honors at your hands, such as appointments on special and standing committees, and election to the office of Censor and of Vice-President, but it now remains for me to thank you for having received the greatest honor in your gift, that of President of the Society. This is especially gratifying since it came to me with absolutely no personal seeking, and after a spirited contest on pending issues. Words fail me to express due appreciation of this evidence of esteem and confidence on

the part of so large a body of my professional brothers, and which, without disrespect to the society, is appreciated even more than the honor of holding the office conferred. In return, I pledge myself to fulfil the duties of president to the best of my ability and judgment, absolutely independently and impartially and with a due regard to all the rights and interests of each and every member. In so far as the influence of the president may control the policy for the year, it will be aggressive yet conservative; aggressive as to the rights of the profession and of this society in particular and conservative as to rights of others.

This will undoubtedly be a very active year for the society and its work for good, it is hoped, will be of lasting value. On January 1, 1898, we will pass from a county society, occupying the entire area of the largest American city, to one limited to but two boroughs out of five—though of the same area, the boroughs of Manhattan and the Bronx—in the third largest city in the world, the so-called "Greater New York." By this change, three other county societies will be entitled to share with us the consideration of medical matters pertaining to the enlarged city. With this transition, there will be great changes in the public departments; for instance, in the Departments of Public Works, Schools, Charities, Health, and Street Cleaning, the efficient and proper management of which we have so much at heart. It is, therefore, suggested that it would be of mutual advantage, and of public benefit, if the elective officers of this society were empowered to invite a conference during the coming month with the officers of the other county medical societies located wholly or partially in our sister boroughs (those of Kings, Queens, and Richmond), for the purpose of cooperation in the supervisory functions which we all should have, and are justly entitled to, over all medical matters arising in the said public departments of the enlarged city of New York. If mutually agreeable, these conferences should be held at least quarterly for the consideration of all public medical questions pertaining to the city departments, which from time to time may arise and which should be submitted to at least some competent representative medical body before any department or public official shall be permitted to promulgate rules affecting the medical profession or its practice, or the conduct of medical charities.

In a representative sense this body might be called the Medical Society of the City of New York, and will be the spokesman of some 2500 reputable physicians who are members of the four county medical societies previously referred to, also acting in the interests of several thousand others. Public officials, either through laxity, ignorance, favoritism, or partisan or vicious tendencies, often err in making appointments or in the line of department work, and consequently a watchful body such as has been suggested, zealous not only for the public weal but of that of the profession also, would have lasting controlling force and effect. Indeed, considering the gradual and insidious encroachments which by legal enactments and otherwise, at least one of the great public departments of the city is surely exceeding its functions as a public servant and tres-

¹ President's Inaugural Address, delivered before the Medical Society of the County of New York, November 22, 1897.

passing upon and usurping the duties, rights, and privileges of the medical profession and the public. We cannot too soon call a halt and demand a surrender of such autocratic and unwarranted powers.

I refer to the Health Department of this city and, in doing so it must be distinctly understood that there is no intention to reflect on the personnel of the commission. I refer to it in order to condemn the autocratic rules and unrestricted and increasing practices of the department and its officials; more specifically, to condemn the free vaccination, and the inspection and examination of school children for contagious diseases, defective vision, etc., regardless of the wealth of their parents or the rights of the family physician or other practitioners; to the ever-increasing control, segregation, and free treatment in public institutions and elsewhere of patients suffering from even the ordinary infectious diseases, which any physician of to-day is fully competent to quarantine and treat at home, in most instances, and that too, without the frequently officious visits and criticisms of the Department Inspector or other employee. In justice to the present commissioners it should be stated that since last spring, when a committee of this society, consisting of the retiring and present president and the chairman of the Committee on Hygiene, had a conference with them, they have issued more stringent rules for the guidance of the inspectors and other employees in their relation with practitioners, and the patients of such, and fewer complaints have come to the ears of the officers of this society. The commissioners at that time promised to eliminate the cause of such complaints of discourteous or unprofessional treatment of practitioners, even if it were necessary to discharge each and every employee of the department, high or low, and they desired that physicians with such grievances should write to them at once, giving full particulars, when the inspector or other employee involved, if guilty, would be reprimanded or discharged, as the offense warranted. If the members of the society would bear this in mind, and act accordingly, there would soon be little cause of complaint on this score.

To return to the main question, it may well be asked: By what right in law or equity does the Health Department, or its physicians, presume to treat disease in public institutions, or elsewhere, and in some instances attempt to dictate or to discredit the diagnosis of the condition, or the treatment, of patients under the care of a licensed practitioner, not only in private life but in public institutions? If the afflicted persons are poor and in need of hospital care they should be treated like other poor patients, by the physicians of the various public institutions under the care of the Commissioners of Charity. If they are well-to-do, then they should be treated by the private practitioner, at home or in a secluded public or private hospital if need be, and pay for the services rendered.

The same rules should apply to the vaccination and examination of school children or others in so far as may be possible. With the gradual extensions of the arbitrary rules of the Health Department, made without consultation with the medical profession as a body, or only, perhaps, with committees of their own appointment or

suggestion; by its yearly addition to the list of so-called infectious diseases which it desires to bring under its control; and by its almost unlimited power over persons, patients, and property, and the too-frequent abuse of power by its employees, it seems that the time has arrived when the medical profession should awaken from its lamb-like complacency and assert its rights as well as those of the public and enforce recognition of them.

Where shall the line of demarcation between the proper functions and duties of the Health Department and its inspectors and other employees, and the rights, privileges, and duties of the licensed practitioner be drawn? I would suggest that this question, which also gives utterance to the feeling of many members of this Society, be referred to a special committee, or to the Committee on Legislation, for an impartial and thorough investigation, and that the committee be directed to report back to the Society, with any recommendations deemed advisable, at the earliest possible date, in order that we shall be in a position when the new civic administration comes into power on January 1st next, to advise it concerning the matters herein referred to, and if necessary, to appeal to the Legislature for the desired relief. The Society should also, with the cooperation of other interested societies, make an earnest effort and use all possible legal influence to induce the Legislature to amend the law which disfranchises and excludes the members of the medical profession from the chief executive position in the Health Department. The only open excuse for excluding physicians from this office has been that they are claimed to be poor business men or executive officers. This is absurd, and especially so when we recall that members of this and other medical societies throughout the city and country who have been, or are, speakers or members of different State Legislatures, or of the United States Congress, or governors, mayors, presidents, managers, trustees, or directors of some of our largest life insurance, telegraph, railroad, or real-estate companies, or of colleges, banks, or various other large corporations, and in which several positions great executive ability is required and rendered. It is an anomalous condition, and as well might a lawyer be disfranchised and debarred from the office of district attorney or counsel to the Corporation of the City of New York, and a physician only eligible and appointed instead.

Among the questions already under consideration by the Society, the correction of the abuses of medical charity is the most important, and in consequence of these well-known abuses, the increased departmental physicians, and the matters previously alluded to, we are as a profession sorely beset. The time seems to be coming when the calling of a physician, as such, outside of public institutions and departments, will become but the luxurious pastime of the wealthy sons of the fashionable set. The abuses of medical charity have been so generally recognized and admitted by the laity, as well as by the medical profession, and have been so thoroughly written up by so many of our members and others, for instance, by Drs. Stephen Smith, George F. Shrady, Landon Carter Gray, F. H. Wiggin, Charles Phelps, J. B. Huber, T. J. Hillis, Douglas H. Stewart, and others, and by

almost the entire medical and secular press of the city, and finally by your Committee on the Abuses of Medical Charity, that were I able it would be superfluous for me to go into the subject further, for the abundant evidence is all one way and is admitted by everybody. It is significant also that in all the medical societies of this State, from Buffalo to Montauk Point, in which the subject has been discussed and committees appointed, the general sentiment has been the same, namely, that grievous abuses of medical charity exist and are rampant, and that they must cease; and that free treatment, or other medical charity, must be limited absolutely to the deserving poor. It only remains, then, for this and sister societies to determine upon satisfactory measures of relief, and to see that they shall be enacted and enforced.

It will be recalled that on May 24th last, your Committee on the Abuses of Medical Charity, which was composed of men representing various interests, rendered a report of its investigations and work, with a copy of a bill, which had passed the Legislature unanimously. This report, after considerable discussion, was accepted, the recommendations therein contained were adopted, and the committee continued, with power. The bill, as you know, failed to receive the signature of the Governor. That bill, with a few minor changes as to details of enforcement and penalties, has my hearty approval, but as I understand that the Committee on the Abuses of Medical Charity proposes to make a supplementary report to-night, which will include a bill amended to suit the objections made last spring by the Governor and a few members of this Society, it will be left for the committee to tell just what legislation is proposed and deemed necessary. In attempting by legal enactment to bring about the necessary relief—and no other means under the circumstances can possibly cope with the abuses,—due regard should be given to the interests of all concerned, for instance: the medical profession as a whole, the public philanthropists, and the incorporated colleges, hospitals, and dispensaries. No “vested right” of any existing legitimate, *properly conducted* institution, or corporation, should be interfered with or abolished so long as such institution shall truly and honestly endeavor to conform to such reasonable laws as may now exist, or shall hereafter be enacted, to correct the abuses referred to.

Let us all get together, give here and take there, acting unselfishly for the general good and combining the harmonious and unanimous action of the members of this Society with the increasing number of other societies ready to lead or assist in the movement. The result will be sure and certain, and will redound to the credit and prosperity of all concerned. If the members of the medical profession as a whole would stand by each other as individuals, unselfishly and honestly as men, the same as lawyers and members of other professions do, there would be little necessity for legislation for the relief of evils which physicians themselves are largely and almost wholly responsible for.

Another question which should engage the serious attention of the Society this winter, and be settled if possible, is whether midwives shall be permitted to exist, be

educated, regulated, and licensed, or shall be abolished as a profession. As a Society we are bound, if only for the public good, to insist that either one or the other of these propositions shall be adopted. As the state of affairs exists to-day, it is a horrible stench and crime in the nostrils and eyes of every civilized community. The name of midwife in this city to-day is synonymous with feticide, infanticide, and homicide. Proof of this may be found in the glaring advertisements and in the startling accounts of criminal abortions which are published in the daily papers or in the coroners' or criminal court records, or in the reports of deaths from septic peritonitis, filed in the Health Department, of many victims who have passed through the hands of midwives. But even such abundant evidence, as the members of this Society well know from what comes to their ears or eyes almost daily, does not tell one-thousandth part of the horrible tale. Only recently have we seen the spectacle of a miserable fiend of this character, who, if but a fraction of the rumors and stories are true, is deserving of punishment far beyond that of electrocution, and who, to save her own miserable, cowardly life, turns State's evidence and thus ensures another death—that of her foolish paramour and tool.

In this city, where midwives have even no legal status, it seems only requisite, in order that they may qualify for such a calling, that, first, from the necessity of widowhood, poverty or sordid gain, they shall have attended one or more cases of confinement, perhaps their own, obtain a certificate from two physicians, and file the same at the Health Department, when the trifle of a little thing like fitness and education is accomplished and they are graduated to go on their errand of mercy, and, not unfrequently, death. As physicians, we have even a more serious personal reason why something should be done to abolish the abuses or crimes of midwifery. It too often happens that after the criminal or ignorant malpractice of a midwife, we are, as a last resort, called in to assist in saving the life of a victim, and as a result of our errand of mercy we are often haled before a court of law, or worse, that of the public press, and there stand charged as the prime mover or abettor of the crime, a stigma which, however innocent we may be, we can never efface during life from the memory of some. I regret to say that the press, in a few instances, for the sake of notoriety, or other reasons, devotes columns to the purpose of parading the physician's innocent connection with the case, rather than to an effort to assist the authorities in apprehending and punishing the real criminal.

The Society of Medical Jurisprudence, at a meeting held in this building on November 8th last, after listening to a very suggestive paper, entitled “Midwifery and the Midwife,” by Dr. C. A. Von Ramdohr, appointed a committee to consider the question of the enactment of proper laws to regulate the practice of midwifery, with power to cooperate with committees of other societies working to the same end. I would suggest, therefore, that our Committee on Legislation be directed to make an investigation of the subject, and to confer with the said committee, and to report back to this Society, with such recommendations as it may deem necessary.

There are other matters of public interest, which the Committee on Hygiene should undertake to study and report upon to the Society, such as the deleterious effect, if any, of the terrible, almost volcanic eruptions which the city has been subjected to on almost all of the avenues running north and south, and particularly below Fifty-ninth street, during the past two years, and which will probably continue another year, and the remedy for the same; also, as to the advisability and methods by which inexpensive public lavatories and toilet-rooms may be established at reasonable intervals in connection with drug-stores or respectable hotels, etc., on or adjoining public thoroughfares, for the convenience of the citizens, men and women; also, as to whether the advantages of the asphalt pavement, now so generally being put down in the city, outweigh the disadvantages, as it is claimed by some that they do not, and particularly as to whether the air-tight pavement is injurious to adjoining houses and residents by forcing the noxious gases, as some claim, to enter the houses; also, as to the injurious nervous effects of long school hours, and the excess or forced instruction of young children, particularly girls, in the public grammar schools, where they are often graduated a year or two before they are old enough to enter the Normal College; also, as to the physical injuries, if any, to the smaller children in the primary grades, who are forced to sit and study during several hours daily over non-adjustable writing-desks, with seats so high that the feet of but a few of the pupils can touch the floor.

These and other matters in connection with public institutions, such as street railway accommodations, milk, water, and other foods, the disposal of manure, garbage, and slaughter-house refuse, etc., are of vital importance, and this society should endeavor to study and correct them in so far as possible; but for fear that your patience is already taxed to the point of endurance, further reference to the questions of this character will be left to the Committee on Hygiene.

Before closing, permit me to refer to one more topic, namely, the question of enlarging our membership for offensive and defensive purposes, by encouraging and inviting all non-sectarian, well-qualified physicians of known respectability to enter our ranks. This society certainly represents, to a greater degree than any other in the city, the pulse, welfare, and wisdom of the profession as a whole, and since the society during generations has been the faithful bulwark which has stood between charlatanism, bigotry, and ignorance on the one side, and the rights and privileges of the public, as well as the profession, on the other, it ought to receive the homage and support of the entire profession of the city, instead, as has sometimes been the case, of unmerited criticism, censure, or revilement from many who ought to and do know better.

This is often called a "fighting society," and only recently have I heard more than one medical man of standing exclaim: "Oh, you are always fighting down there." Well, that is true, and we also have a little skirmish occasionally over the election of officers, or about questions of public and professional policy. But, as to

that, a man or woman or a society which has not some fighting blood is not of much consequence or worth existence excepting perhaps as a missionary to the cannibals. Even a "fighting chaplain" is the more valuable, like famous Parson Caldwell, one of New Jersey's Revolutionary heroes, who, on the battle-field of Springfield, on the appearance of the "Red Coats," gathered an armful of hymn-books to be torn into gun-wads, and, while he probably wanted to say, "Give 'em hades, boys!" shouted, with electrical effect: "Give 'em Watts, boys! Put Watts into 'em, my men! Ah! I see they're out of wadding. That's the tune! We'll all join in!" Let the cause be just, the means of warfare fair, and the motto "Right Makes Might," and we need not fear to have the name of being fighters; rather may we be proud of it.

But, seriously, what has the Society fought about or for? It has fought against bigotry, charlatanism, ignorance, illiberalism, and selfish or unprofessional conduct on the part of members of the profession, as well as against the autocratic or unjust treatment by public officials or departments of the profession as a body, and particularly for the rights and privileges of the latter. It has fought for non-sectarianism in medicine; for a higher and better medical education; for a "golden-rule" policy or guide of ethics, and one by which we can and do discipline the guilty, whether high or low; for a liberal policy toward women who desire to take up the profession of medicine, and, in this, as in most other matters, it has been in the van; for the protection of the public health; for the protection of its members when sued for reporting supposed contagious diseases under a penalty rule of the Health Department, whose inspectors ought to have been held responsible, as for instance, the case of Brown *vs.* Purdy; and for many other questions too numerous to mention. Its steady work during the past seventeen years has been to protect the public and the profession against irregular medical colleges and the hordes of illegal practitioners, midwives, and druggists, and other persons practising medicine illegally, and who would otherwise have swarmed in this city to the serious injury of all.

The burdens and expenses of these prosecutions have been borne solely by this Society, and though they have cost us nearly twice the aggregate amount received in fines, I am sure that we do not begrudge the cost when we think of the immense benefit that has resulted. Great credit especially is due the Society, since it was the pioneer, in 1807, and until very recently the only censor and worker in such field of prosecutions, and in which also we did not expect to, nor do we, derive any pecuniary benefit. Through the courtesy of Mr. Wm. A. Purrington, former counsel, and Mr. Robert C. Taylor, the present counsel of the Society, and our Treasurer, Dr. John S. Warren, I am enabled to give briefly a few figures as to the cost and results of the Society's work in this line, and the result will probably astonish the members of the Society, as well as others. The Society began this series of prosecutions early in 1880, shortly after it had secured the passage of a law for the suppression of illegal practitioners, etc.

From 1881 until October, 1884, the prosecutions were

under the charge of Mr. E. C. Ripley, the costs and fines being as follows; Costs, \$7254.45; fines imposed, \$1350.00; fines received, \$725.00. From November, 1884, until December, 1893, the prosecutions were conducted by Mr. Wm. A. Purrington, the result being as follows: Costs, \$20,041.23; fines imposed, \$14,650; fines received, \$10,275. From December, 1893, to October, 1897, the prosecutions were under the charge of Mr. Robert C. Taylor, with costs and fines as follows: Costs, \$9271.71; fines imposed, \$5385; fines received, \$3160.¹

It should be said in justice to the latter counsel that during his first year and a half of office, owing to an error in leaving out the penalty clause when the medical laws were codified just previously by the State Legislature's Committee, it was necessary to prosecute illegal practitioners under civil suits, and consequently the Society did little of that work at that time, and with little or no receipts from damages or fines. A change in the appointments of new magistrates in the new city courts also interfered with the work. Adding the foregoing figures we have the following as the total costs and receipts from prosecutions of illegal practitioners and others, from 1880 to 1897, inclusive: Counsel fees and disbursements, \$36,567.39; fines imposed by the courts, \$21,585.00; fines collected and paid to our treasurer, \$14,160.00,² the deficit between fines imposed and received being \$7425.00, this amount having been remitted by the courts, or served out by the convicted practitioners. The deficit between counsel's salaries and disbursements and the fines collected and paid to our treasurer was \$22,407.39, making the average yearly excess of costs for the whole period over receipts from fines, \$1318.08. During the past two years together, the counsel's costs has been \$5841.30, and the receipts from fines paid to the Treasurer, \$2610, or a total deficit for the two years of \$3231.40, or an average yearly deficit of \$1615.70.

The above figures do not include the extra legal expenses of the society during the past seventeen years for extra counsel fees, etc., in drafting, and passing, or watching bills in the legislature, or for legal opinions, and for subscriptions and expenses in the Purdy, Van Fleet, and other suits, which would probably increase the grand total of costs for legal work performed by the society during the period named to nearly \$45,000.

We must not stop this work, and from the opinion of our counsel we are led to believe that we cannot do so without having the city worse off than ever, for the city or its district attorneys will not take up the prosecutions. Why the medical profession should be made to prosecute and pay the expenses incurred in prosecuting criminals or others for infringing upon the medical laws, or for imposing upon the public, it is hard to understand. Certainly, no one would expect the legal profession, or any other, to fight infringements upon its and the public's rights. But doctors will submit to almost anything, and when they are not united the few workers cannot make up for

the drones, or the indifferent, and I presume this explains the reason for the imposition.

It is evident from past experience and the future's prospects, that for the counsel's fees and disbursements for the prosecutions alluded to, and which have generally been rendered at a minimum of costs for the work done, and for the other legal work of the society, that it will require an annual expenditure of at least \$3500, or fully three-fourths of our income from dues. It is true that we shall probably average, to be safe, a yearly return in fines of at least \$1200, although during the past two years the amount has exceeded this figure. But as a matter of fact we must have more money or allow this work to cease, for you will recall the fact that the last annual report of our treasurer shows the total annual expenses of the Society to have exceeded the receipts from all sources by nearly \$1000. To offset this, we must have five hundred more members, or else must increase our annual dues to \$4 or even \$5. Of the two propositions I prefer and would recommend the adoption of the former, for when we look over the list of medical men of standing in the city who are not members of this Society it will surprise us, and a canvass among these, I am sure, would soon fill our ranks to the required number to carry on the good work which every physician as a matter of fact ought to be interested in and support. While quality before quantity should be considered, there will be no difficulty in securing the additional well-qualified members if the history and labors of this Society are but half told.

Let us also hold out the olive branch to those physicians who left us fifty years ago owing to the quarrels over old dogmas, and who took upon themselves the name of certain sectarian practitioners. If they will but drop the sectarian title for that of physician, pure and simple, and let the "old" and "new" school questions die out, I am sure that we will welcome them with open arms, as we have received a great many of their practitioners during the past few years who have declared their abnegation of sectarian principles and practice. Let us also open the way for the return of those who left us nearly fifteen years ago, over a matter of the wording or phrasing of a series of ethical rules or by-laws, and whose return to the common mother would help us all, for after all, with a few exceptions, we are mostly at peace with each other, and are working on the same lines for the welfare and general good of the profession. With a united medical profession, working unselfishly for the common good of the public, as well as of the profession, there would be no need of "leagues" or other associations of medical men to spring forth to do that which formerly was and ought now to be our duty.

In closing, I ask for myself and associate officers your kind encouragement and support during the coming year; and you may rest assured that we each and all will endeavor to be honest and faithful servants of the good old Medical Society of the County of New York.

¹ This does not include \$400, which was due the Society, and which has since been paid to the Treasurer.

² Four hundred dollars more has since been paid to the Treasurer.

Illness from Eating Veal.—Sixty students of Vassar College are reported to be seriously ill from having eaten improperly cooked veal.

MEDICAL PROGRESS.

Pneumonia Following Anesthesia.—WHITNEY (*Boston Med. and Surg. Jour.*, September 23, 1897) says that attention has been called to the supposed increasing frequency of pneumonia after operations when ether has been employed as an anesthetic. There is no reason to suppose that this is a more common occurrence at present than formerly. It appears so, partly because other infectious processes have been eliminated to such an extent that this one stands out more prominently. Anesthesia-pneumonia does not differ from other types of pneumonia. There are plenty of microbes in the mouth of a healthy individual, but under ordinary circumstances they are rendered harmless. Under certain conditions this power fails, and a septic pneumonia results. Experiments upon animals have shown that prolonged etherization is one of these conditions.

The practical conclusion is that disinfection of the mouth before anesthesia should be carefully attended to, while the etherization should be as short and light as possible. The mouth should be cleansed, especially about the roots of the teeth, and the throat gargled several times with a warm solution of chlorinated soda. This should be done twelve hours before operation and again immediately preceding anesthesia. The following solution will be found of service:

℞	Liq. sodæ chlorinat.	. . .	3 iij
	Aq. menth. pip.	. . .	3 ij
	Glycerin	. . .	3 ij.

After which, the thorax and tonsils should be sprayed with a solution of peroxid of hydrogen, one part water to three parts of peroxid. Then the nose should be douched with a saturated solution of boracic acid, to which half a teaspoonful of salt has been added. As a last detail, the cone or sponge used for the anesthesia should be sterilized for each patient. Though this may seem like an excess of nicety in preparation, one never knows in which case these precautions may save the life of a patient.

A New Method of Treating Fracture of the Jaw.—HANSY (*Centralbl. für Chir.*, October 9, 1897) recommends the following as the best method of treatment for fracture of the jaw: After the complicating wounds of the gums and external skin have been properly cleansed the fragments of the jaw are replaced as carefully as possible by means of manipulations with the fingers and by pressure of the jaws together. Next, a piece of iron, copper, or zinc wire, flexible and strong, is bent so that in shape it approximates the inner margin of the teeth. It is bent around the back teeth, and brought together in the middle line, and the ends twisted lightly together. Then, a number of pieces of fine wire such as florists employ are passed between the teeth, and with them the anterior and posterior portions of the heavy wire are bound together. When the character of the teeth will permit it, the wire is wrapped around their necks. In this way the heavy wire is firmly fastened in position. If necessary the wires may be tightened on the following day. If the apparatus is efficiently applied the fragments will be held so firmly in position that neither accidentally nor by pressure of the

fingers can they be disturbed. With this method, Hansy has obtained excellent results in the treatment of three complicated fractures of the jaw, two of them being of the lower and one of the upper jaw. One advantage of this method is its great simplicity, nothing being required but wire, a pair of pincers, and cutting-forceps.

Proof of the Existence of Meconium.—SCHMIDT (*Centralbl. für Gynäkol.*, October 9, 1897), as a result of investigations has determined that meconium outlasts in the corpse by a considerable time all other tissues which are not free from water, such as bones, teeth, hair, etc., excepting such pathologic products as calcified tissues, concretions, etc. If meconium in considerable quantity is exposed to the air for six months or more, it dries only slightly, and in a thickened condition it is still easy to demonstrate both macroscopically and microscopically its anatomic characteristics. It is also easy to find microscopically, the characteristic points of meconium from spots or stains which are eight or nine years old. The particles of meconium are not bits of the coloring matter of bile, but are shrunken and partly degenerated cells, also cells of the vernix caseosa which has been swallowed, and cast off epithelial cells of the intestines which are stained with bile. The distinction sometimes referred to between yellow and green meconium is an artificial one. The evaporation of the water contained in yellowish-brown meconium, and the shrinking of the cells which results from it produces meconium of a greenish-black color.

THERAPEUTIC NOTES.

The Use of Senecio in Disorders of Menstruation.—FOTHERGILL (*Med. Chronicle*, September, 1897) reports his personal observations with senecio in disorders of menstruation. He used a tincture of *Senecio Jacobea*, 1-10; also, a 1-1 aqueous and alcoholic extract of the same plant; also, a dried extract. The doses used were 1 to 2 drams of the tincture, 20 to 30 minims of the fluid extract, and 1 grain of the dried product. Three or four doses were given daily. He found that senecio does not cause abortion, but will cure most cases of functional amenorrhea. In cases of anemia and other conditions of exhaustion due to disease, the drug was found to have little effect. It proved useful in certain cases of dysmenorrhea, but the relief was uncertain. In six healthy married women the administration of the drug caused the menstrual flow to appear from three to nine days before it was expected.

Ivy-Poisoning.—SCHONBERG (*Phila. Polyclinic*, October 16, 1897) says that none of the remedies used in the treatment of ivy-poisoning are specific. All of them are designed to relieve the itching and burning and subdue the inflammation. Of almost equal value are: (1) saturated solution of boric acid; (2) fluid extract of grindelia robusta, 1 dram to 4 ounces of water; (3) aqueous solution of sodium hyposulphite, 1 dram to the ounce, (4) Laborraque's solution, 25 to 50 per cent.; (5) black wash, diluted one-half with lime water; (6) bromin, 10-15 minims to 1 ounce of olive oil.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, NOVEMBER 27, 1897.

MEDICAL JOURNALS AND COLORED COVERS.

ON the title-page of the *Medical Record* for November 20th, we find in large type a notice to the effect that "The next issue will be a special number, with many attractive features, including a handsome colored cover." Think of it, you busy practitioners, struggling perhaps with a desperate case of pneumonia or a dangerous temperature in a puerperal woman, and hoping that your next week's medical journal will bring some helpful suggestion to aid you in the emergency! A colored cover! What comfort, what support, what help in your hour of need! And perhaps within that cover, instead of medical science, will appear many well-paying advertisements of winter-resorts and railroad transportation lines.

This cover in itself will doubtless stir the world of the provincial Medicus to its depths, and, incidentally, bring in bushels of subscriptions. We once heard the *Medical Record* spoken of as a scientific journal, but how greatly will its prestige be enhanced when it breaks upon an unoffending professional public in all the gorgeousness of the colored cover! With what breathless expectancy do we await this advance in medical journalism?

DOES INDIGENOUS PULMONARY TUBERCULOSIS EXIST IN COLORADO?

It can scarcely have escaped the notice of the careful observer of current literature, lay as well as medical, that during the past few years there has been an increasing number of patients with pulmonary tuberculosis in Colorado, without considering imported cases. The conclusion has been drawn that Colorado will eventually lose its reputation as a State free from indigenous disease of this character, and *pari passu* its high renown as a health-resort for consumptives. So serious has this prospect seemed to some of its inhabitants, that they have advocated the passage of stringent laws regulating the residents and habits of life of tuberculous patients, which, if enacted, would certainly have the effect of very greatly reducing the number of persons having tuberculosis who otherwise would seek health in Colorado.

According to Bonney (*Boston Med. and Surg. Jour.*, October 7, 1897), all this excitement is premature. "I am convinced," says this writer, "that as yet the data introduced upon this subject are entirely too meagre to warrant positive conclusions as to the supposed evidences of contagion in our community. I protest, therefore, against an undue agitation at this time, on the ground of insufficient testimony."

The reports of the Denver Health Department seem to show that the number of deaths from tuberculosis contracted in Colorado, is each year greater than during the preceding year. Thus in 1893, the native cases formed 13 per cent. of the total tuberculous death-rate; in 1894, 14 per cent.; in 1895, 15 per cent., and in 1896, 18 per cent. Bonney says that "these figures are not in every respect accurate, and that they are especially misleading, because the yearly increase in the relative percentage of deaths from native tuberculosis is due, not to an actual increase, but to a decrease in the number of deaths from tuberculosis elsewhere contracted, the practice of sending hopeless cases home to die, apparently being more faithfully carried out now than formerly."

Colorado suffers too, from the fact that an unusually high proportion of her children are of tuberculous parentage, and, therefore, are peculiarly prone to contract the disease. Hence, it is not surprising that, of 230 deaths from native tuberculosis which have occurred during the last four years, one-fourth were of

children under five years of age, and a considerable portion of these were from tuberculous meningitis, the development of which results as little perhaps from direct external contagion, as any variety of tuberculosis.

So far as clinical testimony is concerned, it is overwhelmingly against these conclusions which, strangely enough, have been advocated by the local health board. In the article referred to, Bonney quotes the views of a number of prominent physicians to this effect. As an illustration, the statement of Gardiner¹ may be taken, that in fifteen years preceding 1892, the physicians of Colorado Springs had observed only ten native cases of tuberculosis. "The well ones," says this writer, "are frequently confined with the sick, with the attendant anxiety, work, and worry, and there are many houses in which numbers of people have died from the disease." More recently, Solly,² also of Colorado Springs, is quoted as saying: "At least one-third of our population are consumptives; the town, which contains some 15,000 people, has been established twenty years. An inquiry made by interested physicians into the number of cases known to have originated in the town resulted in a report of twenty in all. Although it is probable that our brilliant sunshine and dry air more quickly destroys the vitality of the bacilli than an Eastern atmosphere, yet in the poorer lodgings of the town there are many ill-ventilated rooms, inside or on the north side of the buildings inhabited by consumptives and their families, where recklessness of expectoration and carelessness of ordinary cleanliness are marked features of domestic *ménage*. Yet cases of contagion do not average more than one a year."

Bonney also makes the point that there is, in many of the instances of death reported as due to tuberculosis contracted in the State, no sufficient demonstration that the disease was really so contracted. Aside from the fact that autopsies are a constant proof that tuberculosis may exist unsuspected, it is no uncommon experience with physicians in health-resorts for consumptives to find the disease in the supposedly healthy relatives who accompany the patients.

The practical bearing of the whole subject seems to be, that considering the vast tide of actually or potentially tuberculous individuals which has risen to the very mountain-tops of Colorado, there is a re-

markably small amount of indigenous tuberculosis. Whatever relative importance may be attributed to the predisposing and exciting causes of this disease, it is admitted by all that with reasonable precautions concerning sputa, the danger of infection is practically nil; and even without these precautions, the danger of infection in the open air is exceedingly slight. The situation is one which calls for the exercise of intelligence rather than the enactment of harsh restrictive laws.

WATER-BORNE TYPHOID.

EVER since the acknowledgment of the bacillus described by Eberth and Gaffky as the direct etiologic factor of typhoid fever, pathologists have believed, and clinicians have gradually come to accept the verdict, that the disease can only be produced by the ingestion of the bacillus with the food or drink. Clinical evidence of this mode of the propagation of enteric fever is not wanting, and almost every observer has been able to deduce convincing testimony by the direct tracing of an infection. Any evidence which tends to establish this view upon a surer basis is entitled to consideration. Dr. Ernest Hart, Chairman of the Parliamentary Bills Committee of the British Medical Association, has prepared the report of the committee, which has just been published (*Water-borne Typhoid; a Historic Summary of Local Outbreaks in Great Britain and Ireland, 1858-1893*).

The report is valuable not only because it leaves no further doubt in the mind of the reader as to the propagation of typhoid fever by the ingestion of infected water, but because it gains authority from a minute analysis of 205 epidemics, all of which had their origin, directly or indirectly, in the manner mentioned. Dr. Hart purposely omits from consideration eight epidemics of the disease because of their doubtful causation, relying upon those of certain origin to prove his position, although the eight epidemics are cited in detail, and leave little room to doubt the mode of infection.

The author first considers polluted wells as assisting in the spread of the disease, and selects several undoubted instances corroborated by bacteriologic examination. He condemns the employment of drinking-water from wells liable to pollution, and urges that "when the local conditions obtaining are such that they must needs cause excremental pollution of the ground around houses, then it is high

¹ *American Jour. Med. Sciences*, July, 1892.

² *Boston Med. and Surg. Jour.*, April 1, 1897.

time to close all wells sunk in the neighborhood of the pollutions." The New York State Board of Health promulgated a similar proposition many years ago, and its beneficent influence has been shown, in the course of time, among the rural population.

The report next considers the direct pollution of drinking-water by human excreta, as in the careless use of the banks of streams by workmen, and indirectly, as by contamination from leaky sewers. He has been able to trace outbreaks of typhoid fever from these causes not only, but, as well, from cesspools constructed in loose soil with no provisions for making them watertight. He shows that although it may seem safe to throw excreta into privies during a frost, the subsequent thaw may evoke a typhoid epidemic, since the germs of the disease remain actively potent. The author next discusses epidemics caused by drainage from manured fields, by polluted subsoil water, by diluted excreta used as water-supplies, and by river-borne infection. Canals as suppliers of drinking-water are absolutely condemned, and the proper filtration of public water-supplies is urged. Two epidemics are cited as having their origin from churchyard drainage, and the author writes: "Man, however, does not appear content to pollute his drinking-water by the voided filth of the living, but is too often careless in the matter of contaminating his water-supply by the drainage from the resting-places of the dead, and thus it comes about that danger arises from the proximity of burial-grounds to the areas of catchment for watering-pounding purposes."

The report mentions an epidemic during which 322 persons were attacked, and in which the infection was traced to the washing of milk-cans with polluted water. He discusses some minor points in the causation and course of the disease, and concludes by urging the abolition of cesspools where this is feasible, by insisting upon the maintenance of freedom of pollution of the watersheds and gathering-grounds of public water-supplies by condemning the close proximity of water-mains and sewer-pipes.

Although the results of these laborious investigations are not strikingly original, they prove beyond peradventure that typhoid fever is largely a preventable disease, and that the prophylaxis must lie in the hands of the sanitary authorities. This is especially true of large cities the water-supply of which

is apt to become contaminated if the most rigid watchfulness is not at all times exercised. The importance of careful scrutiny of the supply of drinking-water can not be too frequently impressed upon local and State Boards of Health, upon whose energy and wisdom the well-being of thousands of human beings constantly depends. In emphasizing this feature of sanitary work as it relates to typhoid fever, the committee has placed all communities under lasting obligations.

ECHOES AND NEWS.

Dr. George T. Kemp.—The appointment of Dr. George T. Kemp to the chair of physiology in the University of Illinois has been announced.

Elected Honorary Member.—Professor Von Röntgen of Würzburg has been elected an honorary member of the Swiss Scientific Society, Berne.

Russian Medical School for Women.—The newly established medical school for women at St. Petersburg recently opened with 165 students.

Retirement of Dr. W. E. Walters.—Lieutenant-Colonel William E. Walters, deputy surgeon-general, has been retired under the Thirty-Years' Service Act.

Typhoid at Clifton.—The recent outbreak of typhoid fever at Clifton, England, has been definitely traced to milk infection. Nearly 150 cases have been reported.

Druggist Fined.—A New York druggist has been fined \$150.00 for practising medicine without a license. This is the heaviest fine yet imposed for such an offense. The Medical Society of the County of New York was the complainant.

Yellow Fever in Florida.—A soldier died on the 18 inst. at the barracks hospital at Fort Barancas, Pensacola, Fla. After making an autopsy, State Health-officer Porter and the surgeon of the post, declared the cause of death to be yellow fever.

Röntgen Society.—At the inaugural meeting of the Röntgen Society, which took place recently in London, England, among other exhibits was a life-sized skiagram of the entire skeleton of a living woman, taken by Dr. W. J. Morton of New York.

Women Sue Druggists.—Two cases are now being heard in Brooklyn, N. Y., in each of which a woman is suing a druggist for \$5,000 and \$10,000 damages, respectively, for prescribing medicine which she alleges caused permanent injuries and impairment of health.

Death of Dr. Mark Olivet.—The death at Geneva, on the 24th ult., is announced of Dr. Mark Olivet, professor of psychiatry in the University of Geneva. Professor Olivet

was the author of numerous publications on medicine and hygiene. He was in his seventy-sixth year.

Typhoid Fever in Glasgow Harbor.—The Russian Volunteer steamer "Kieff," which at present is lying in dock at Glasgow, arrived at that port on the 23d ult. from Russia, *via* Leith, and reported one death from typhoid fever and six of the crew stricken with the disease.

Professor Forel Resigns.—Dr. Forel, professor of psychiatry in the University of Zurich and director of the State Asylum for the Insane, has resigned these offices, owing, it is said, to the attacks made upon him by the press for the part he has taken in opposing the use of alcohol.

Chicago Pathological Society.—The annual address before the Chicago Pathological Society will be delivered on the evening of Friday, December 3rd, by George M. Sternberg, M.D., Surgeon-General of the U. S. Army. The subject of the address will be "Yellow Fever; Its Etiology and Pathology."

Emergency Hospital in the Pension Office.—There are 1800 clerks employed in the Pension Office at Washington, and as some of them are veterans suffering with heart trouble, an emergency hospital has been fitted up in the building for the purpose of caring for any case of sudden illness which may occur.

Bubonic Plague in India.—The plague is still raging in the Poona district. There are now 634 cases in the hospital at Poona. Many new cases are reported daily, and the death-rate is nearly 100 a day. Several Europeans have been attacked with the disease. Business is practically suspended and the inhabitants are deserting the town.

Serum Treatment of Whooping-Cough.—Dr. Violi of Constantinople proposes to treat whooping-cough by means of injections of serum taken from calves which have been vaccinated against smallpox. He has treated a number of cases in this way in which the characteristic paroxysms disappeared within from eight to ten hours after the first injection.

New York Society for the Relief of Widows and Orphans of Medical Men.—The annual meeting of this society was held on the 17th inst. at the Academy of Medicine, Charles A. Leale, M.D., was re-elected president; Henry Tuck, M.D., treasurer, and Drs. G. M. Smith, S. T. Armstrong, W. F. Cushman, J. Cabot, C. H. Knight, A. Jacobi, and J. L. Kortwright, managers.

New Consumption Hospital for Vienna.—A large hospital for consumptives is to be erected, through the generosity of several citizens of Vienna, at Alland, a small hamlet near the city. It is expected that it will be ready for occupancy by the spring of 1898. It covers a large area, and is sheltered on all sides save the south by hills and forests. The building will accommodate about 300 patients, but will be enlarged in the future. It will contain all the latest hygienic appliances.

Department of Public Health.—At a meeting held recently, the New York Board of Trade and Transportation adopted a resolution declaring the health of the people of far more importance than the proposed enlargement of the navy or other preparations for war, and calling for the appointment of a committee to consider the desirability of the establishment of a national department of public health.

Intestinal Parasites in China.—It is said that 95 per cent. of Chinese children suffer from thread-worms. This is supposed to be due to the fact that in China unfiltered water is used, and vegetables are, as a rule, eaten raw. European residents there boil or filter their water and cook their vegetables, and are free from this trouble. The Chinese, however, who rarely eat any meat other than pork, do not suffer with tape-worm, whereas 20 per cent. of the Europeans, who eat a good deal of beef, are especially liable to these intestinal parasites.

CORRESPONDENCE.

THE TREATMENT OF ABORTION.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: I have read with interest Dr. Henry J. Garrigues' article on "The Treatment of Abortion" in THE MEDICAL NEWS of November 6th, and beg to be allowed to offer several criticisms:

1. The author very properly pronounces Thomas' small dull-wire curette as useless for the purpose of emptying the uterus during an abortion, and declares his (Thomas') "large dull-wire curette, with an opening admitting the tip of a forefinger, an admirable instrument for the purpose, formidable as it appears."

I think the author is in error in calling Thomas' large dull-wire curette a "formidable instrument." The only two dull-wire curettes which go by the name of Dr. Thomas, so far as I know, are the small one, which is used for removing intra-uterine vegetations and is useless in abortion, and a somewhat larger one, which I have employed for years in abortions *under two months*, where Dr. Garrigues says he uses Récamier's or Sims' curette or Simon's sharp spoon. I have never found it necessary, by the way, to employ a *sharp* curette in early abortions, or even later, unless there had been an acute endometritis with inflammatory adhesion of the placenta.

The curette which Dr. Garrigues must mean, and which he calls a "formidable instrument," can be no other than the *large dull* curette, attached to a long, stout shank and handle which I first introduced to the profession in 1883 (see *Am. Jour. Obst.*, Feb., 1883). "The Immediate Removal of the Secundines after Abortion" (and which is mentioned and pictured again in my "Report of the Gynecological Service of Mt. Sinai Hospital," *Am. Jour. Obst.*, Oct., Nov., Dec., 1895), and has been sold by instrument-makers under my name all these years. Strange to say, this fact seems to have escaped Dr. Garrigues' notice!

There are two shapes of my placental curette, one round and the other oval, the latter being especially designed for use when the cervical canal is long and not fully dilated. After the second month both can usually be inserted without difficulty through a fully dilated canal. A large flat forceps for the removal of the *detached* decidua accompanies the curettes. The curettes may be used whenever the canal is sufficiently dilated to admit the index-finger, and this brings me to criticism number

2. Dr. Garrigues omits to lay down as a condition indispensable and invariable, I think, for the efficient and thorough use of the curette after abortion, that the uterine canal should be sufficiently dilated to permit the index-finger to explore the uterine cavity to the fundus, in order not only to determine the quantity and location of the retained secundines, but also to enable the operator to be perfectly sure that the cavity has been entirely emptied when the operation is completed.

To trust to the information on this point imparted by the curette alone, even in the hands of the most expert operator, is notoriously unsafe.

3. Dr. Garrigues has omitted to mention that at times great assistance is afforded to the cervical dilators which he mentions by gently nicking the lips of both the external and internal os with a straight, blunt-pointed knife, especially when the edges of the external os are rigid and cicatricial as occasionally happens after a trachelorrhaphy.

I have found the index-finger, assisted by counter-pressure over the fundus with the other hand, as good a dilator as any of the cones or olives, provided it was possible to insert its tip ever so little into the internal os. In incomplete abortion, when any considerable portion of the secundines is retained this can usually be easily done.

4. I cannot agree with Dr. Garrigues' advice and practice to tampon either the uterus or vagina after emptying the former of the products of conception. An *empty* uterus after abortion *always* contracts, and all hemorrhage from its cavity ceases. A failure to contract at that time is an exception. To pack the uterus is therefore unnecessary, and rather tends to interfere with contraction and involution than to aid them. And why pack the vagina? I usually employ a hot sterilized or carbolyzed intra-uterine douche after emptying an aborting uterus, and I can scarcely recollect a case where prompt contraction and cessation of bleeding did not take place. Only in women very much exhausted from hemorrhage might it be advisable to pack the empty uterus after abortion with iodoform gauze, or better sterilized gauze, in order to save her even the few drops of blood which would ooze away during the first day or two, until she has rallied. At least that is my opinion, and has been my practice for many years, and I have no reason to regret or change it. Of course, if the object of packing the uterus is to influence a septic condition of the endometrium, the case is different. But then it would seem to me that gauze soaked in peroxid of hydrogen or kept moist with the forty-per-cent dilution of alcohol recently recommended by Dr. Ill must be preferable to iodoform gauze as a uterine packing.

With the above exceptions I agree substantially with all Dr. Garrigues has said in his instructive and practical article.

PAUL F. MUNDÉ,

20 West 45th Street.

NEW YORK, November 20, 1897.

OUR BERLIN LETTER.

[From our Special Correspondent.]

ACCIDENT INSURANCE AND CARCINOMA DEVELOPING AFTER TRAUMA—THE PATHOGENEITY OF BLASTOMYCETES AND THEIR CONNECTION WITH CANCER—CLINICAL EXPERIENCES WITH LUMBAR PUNCTURE—THE SPREAD OF ANCHYLOSTOMIASIS THROUGH EUROPE.

BERLIN, November 16, 1897.

AS the result of a discussion which occurred some time ago in the Berlin Medical Society, Dr. I. Boas published in the last number of the *Deutsche Medicinische Wochenschrift* an article on "The Connection between Trauma and Intestinal Cancer, and the Question of the Liability of Accident-Insurance Companies in Such Cases." In a series of sixty-two cases of intestinal cancer in which the previous history and antecedents were carefully studied, he found in nine a clear history of trauma which seemed to have some etiologic connection with the development of the neoplasm. Curiously enough, he found in only two direct heredity (in general, he considers the influence of heredity in cancer much overestimated), though in seven a brother or sister had suffered from cancer. None of these patients with hereditary cancer, however, presented a history of trauma, so that the disturbing factor of a possible hereditary predisposition is excluded in the cases in which an injury is considered to have been the cause of the disease. Dr. Boas does not consider that the injuries were the immediate cause of the development of cancer, but is of the opinion that small cancerous nodules of the intestines, in an absolutely latent and quiescent stage, are irritated into developmental activity by the trauma.

In the discussion, Professor Führbringer and others went further than this, and advanced the opinion that the injury to intestinal tissues had either lessened vital resistance and so given an opportunity for cancerous infection, if cancer is an infection, or had disturbed the equilibrium of cellular elements in the tissues and so occasioned an overgrowth of the epithelial elements, which constitutes a cancer. Any of these opinions, even the most conservative, would give the patient the benefit of the accident.

In insurance, according to German law, it seems it is not necessary to prove that the accident in question was the only cause, or that it was the immediate cause, of the inability to continue one's occupation, of the mutilation, or death which followed. If it stands in a clear causal relation to these consequences, and if this can be demonstrated to the court, then the verdict will be that the insurance must be paid.

As Dr. Boas says, "it is not clear whether these quiescent cancerous nodules would ever have taken on

activity but for the irritation resulting from the trauma, though malignity might have developed about the time of the apparent arousal of the disease by the injury." He considers, however, that the statistics of cancer after trauma are too rich in examples for it to be a mere question of coincidence. He considers that in this connection the only thing still remaining open to discussion is how long after an injury has been received may the development of a cancer be fairly thought to have resulted from a trauma. In his own cases the disease developed at varying periods of from two months to four years subsequent to the injury. He does not seem to consider the shorter interval too short or the longer one too long for the relation of cause and effect to be held as existent. As to shorter intervals than two months, he would hesitate to attribute the cancerous development to the injury, though he seems to think that a longer period than four years might intervene and yet the injury be a causal element in the neoplastic activity.

The question has more important bearings when cancerous disease other than of the intestine is taken into consideration. Many patients with cancer of the breast present a history of injury, even if it be no more than the traditional blow of the nursing. If accident-insurance companies are liable for cancers which develop after injuries, it will only be a question of time when the courts will recognize that railroad companies and other corporations should be held liable on the same grounds. This involves a vision of long-continued legal proceedings and the consequent precious opportunities for legal and medical experts to discuss a question which ought to prove as profitable in the future as traumatic neuroses, railway spine, etc., have in the past.

Of special interest, in connection with the etiology of cancer, was the discussion on "The Pathogeneity of Blastomycetes and Their Causal Relation to Cancer," which occurred at the last meeting of the Berlin Medical Society. Dr. Buschke read a paper on the subject, the subsequent discussion of which evidenced the consensus of the opinion in the matter. The general sentiment was in accord with Dr. Buschke's idea, who considered that notwithstanding the claims made for it (San Felice of Palermo, and Roncali of Rome) there is absolutely no possibility of blastomycetes being the cause of cancer. Dr. Buschke himself has experimented with cultures of blastomycetes, which had, under the influence of electricity and artificial brooding temperatures, been rendered especially virulent, but he has never been able to cause the appearance of a tumor in any way resembling cancer in a series of some twenty cases with which he experimented.

On the other hand, now that special attention has been called to the subject, the pathogeneity of blastomycetes for various animals and for man is becoming better known with further clinical and experimental experience. Here the doctor made his acknowledgments to American experimenters—Curtis, Gilchrist, and Rabinovitch. He considers that the subject of the pathogenic yeasts which is just opening up will yet prove an extremely interesting branch of microbiology.

While the neurologists decry the frequent use which is

made of lumbar puncture for diagnostic and therapeutic purposes, and oppose, on theoretic grounds, its employment except under the most urgent circumstances, the practitioner, and especially the specialists in diseases of children, are coming to consider it more and more as a simple and extremely useful diagnostic method with scarcely any attendant risks. As the neurologists oppose it on theory while the practitioners can point to a large number of cases in which the procedure has not done any harm, it is clear what impression the profession in general is going to have of this difference of opinion.

At the last meeting of the Society for Internal Medicine Dr. Stadelman reported a series of cases in which lumbar puncture had been made without accident or even inconvenience, and he considers that now the purpose of the procedure, at least as regards diagnosis, may be widened in its application. It is useful not only in distinguishing the forms of meningitis, and the existence of intrameningeal pressure from hydrocephalus, and brain and spinal tumors, but also for the differential diagnosis of other conditions simulating central nervous affections.

When, for instance, a state of stupor has intervened during one of the infectious fevers and the absolute prognosis will depend upon whether or not the serous membranes of the cord and brain have been infected by the specific virus, lumbar puncture will often decide the otherwise extremely difficult question. When an obscure unconsciousness is present the condition of the cerebrospinal fluid will often furnish valuable diagnostic evidence. In these cases the risk of any serious result is extremely slight, while in some instances the relief of cerebral pressure has an immediate beneficial effect. It is only in cases of acute increased intracranial pressure, however, that Stadelman has ever seen any good effect resulting from this procedure. He considers that the diagnosis of hemorrhage into the brain or cord is possible when the cerebrospinal fluid is found uniformly tinged with blood. As to the bacteriologic examination of the fluid, he considers that negative results either microscopically or even by culture methods cannot be relied upon for diagnostic purposes, and it is only when the results are positive that reliable conclusions may be reached.

One of the striking things in all clinics at which patients suffering from anemia are presented is the care taken from the first to exclude the *anchylostomum duodenale* as the cause of the condition, though why, since it is oftenest found in the jejunum or upper part of the ileum, while the duodenum is often entirely free, is not quite so clear as it might be.

Twenty years ago the parasite was practically unknown here. When the St. Gotthard cases occurred the explanation of their etiology came as a distinct surprise; for the parasite was considered endemic only in Egypt, and perhaps in parts of Italy. Since Grawitz found four cases in the neighborhood of Berlin some three years ago a number of cases from all over Germany have been described, and this parasite is no longer considered a rarity. At the present time the stools of every patient suffering with severe anemia are examined for the *anchylostomum*. The spread of this parasite has been traced to the introduction

of Italian workmen for trench- and tunnel-work, and for brickmaking. One case is known to have infected a large number of workmen. As it is just this class of men that we, in America, are receiving from Italy, it would seem to be only a question of time, unless special precautions are taken, until our clinicians will also have to think of this parasite in their cases of anemia.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

CONTUSIONS OF THE ABDOMEN—TREATMENT OF IN-OPERABLE MALIGNANT TUMORS BY LIGATURE—THE LAST WORD ON FORCIBLE REDUCTION IN POTT'S DISEASE—SIMILAR TREATMENT OF SCOLIOSIS—RELATIVE VALUE OF NEPHRECTOMY AND NEPHROTOMY—RADICAL CURE OF HERNIA IN YOUNG CHILDREN—INDICATIONS FOR OPERATIVE TREATMENT OF CANCER OF THE RECTUM.

THE Eleventh Annual French Congress of Surgery was held at Paris October 18 to 23, 1897. A paper by DEMONS on *Contusions of the Abdomen* brought out widely different views upon the indications for operations in these cases. The conditions under which the various abdominal organs may be injured, and the most reliable points in diagnosis were given at length. In regard to prognosis, the writer said that medical treatment, directed toward the relief of shock and pain, the arrest of hemorrhage and the maintenance of immobility of the affected organs, has given such good results that surgeons are unanimous in employing it. It is in the cases which are between the extremes that opinions differ as to the course to be pursued. Recognizing the failure of medical measures in many cases, surgeons often take a position which may be called one of "armed expectancy," and defer operation until signs, which cannot be met by medical treatment, are manifested. Experience has shown that these signs rest, not upon the lesions themselves, but upon complications already present at the time the signs become obvious; such as peritonitis or intestinal perforation. Hence, while not entirely rejecting this "armed expectation," it is a dangerous doctrine to advocate.

Theoretically celiotomy is a satisfactory procedure in these cases, offering as it does, an opportunity to prevent or to relieve complications including hemorrhage, infection, abscess, etc., but practically it has not fulfilled our expectations. Future results will probably be better than those so far obtained. The operation should be performed as early as possible, and the best time seems to be between the symptoms caused by the accident, and those which develop later, that is to say, within the first twenty hours. The sole contraindication to an immediate operation is the existence of shock so profound that the patient will not withstand a surgical operation. A young man who was kicked by a horse was operated upon twelve hours after the accident. Although three liters (quarts) of blood were found in the peritoneal cavity, from a contused wound in the liver, the patient recovered. The writer said that he did not believe this patient would have recovered had operation been delayed,

and had it been sooner performed, the patient would certainly have died upon the operating-table.

DENTU said that lesions of the kidney and bladder are easy to diagnose, which is not true of other abdominal injuries. Lesions of the abdominal wall are not of great assistance in diagnosis; but a hyperesthesia of the abdomen is an indication for operation. An increase in the respirations to twenty-eight or thirty per minute he considered an absolute indication for operating. Cold extremities are also significant. Suppression of the secretions, not to be confounded with retention of urine, points to the necessity for immediate interference. In the consideration of shock, it is important to determine whether it be of nervous origin or due to the loss of blood. In the latter case, if the symptoms are becoming constantly more accentuated, there is no reason for a moment's delay in operating. In other cases, it is better to wait for an hour or two after the accident before operating. Undoubtedly cases of grave contusion of the abdomen may exist without giving rise to symptoms, but their number is far less than it was before the symptoms were as carefully noted as they are at present.

According to MICHAUX celiotomy is the only treatment to apply in contusions of the abdomen. It has been sufficiently demonstrated that the symptoms are not an adequate index of the gravity of the lesion or lesions; and if we cannot tell what the injuries are, the only thing to do is to investigate. True, Mendy found that in 289 cases of contusion from the kick of a horse, thirty per cent. of the non-operated patients died; and also seventy-one per cent. of those operated upon. These figures have no value; for in many instances no details were given, and in 18 out of 25 fatal operative cases, peritonitis was already established. Of the speaker's own cases, 20 in all, 14 of the patients were operated upon, with 2 deaths, while of the 6 not operated upon 2 died. He denounced the doctrine of "armed expectancy" as absolutely unreliable.

MOTY is an advocate of opium if operation is not performed. He regards the use of ice in such cases as productive of grave complications—notably of phlebitis.

DOYEN spoke of the use of a jet of vapor to control hemorrhage from the contused liver or omentum, as advised by Sneguirev. The remedy has antiseptic as well as hemostatic virtues. If a tampon is employed, it is well to shut off the surrounding peritoneal cavity by a few sutures. Large blunt glass drains are inserted, the outer end being connected with a rubber tube which falls into an antiseptic solution. In this way the abdominal cavity is kept sterile, and if necessary may be pumped out.

TUFFIER has revived the *treatment of inoperable malignant tumors by ligature*. In the pre-antiseptic days this method of treatment was productive of very bad results. Under aseptic precautions he has obtained results in some instances which were most satisfactory. Thus, by tying the four arteries supplying the uterus in a woman afflicted with an epithelioma, the growth diminished to such an extent that after sixteen months the patient had very little trouble from it. In cancer of the tongue, lig-

ature of the external carotid gave him only a temporary improvement in seven cases. Infection may be limited in a similar manner. Thus, he tied the pedicle of a suppurating kidney in a patient who was too septic for a nephrectomy, and in whom nephrotomy was contraindicated by the multiplicity of the abscesses. The toxic symptoms disappeared at once, though the patient died two months later of suppuration of the other kidney.

BOSQUET succeeded with this treatment in several cases of neoplasms of the face. HARTMANN found it to be of value in fibromata of the uterus, though it had not been successful in epithelioma of the uterus.

CALOT gave further *details and results of the treatment of Pott's disease by forcible reduction*. A traction of 60 to 160 pounds is made for some seconds; the deformity obliterated by a direct pressure of from 30 to 80 pounds; finally, a bandage is firmly applied. Very large or very old projections are reduced in several *stances*, separated by an interval of three or four months. Of 204 children treated by this method, 2 died in a couple of days, 3 in some months of brochopneumonia and meningitis; in 1 patient partial paralysis occurred within a few days, while in 2 others intervention was followed by the formation of an abscess.

From observation of thirty-five cases, REDARD regards this treatment of Pott's disease as most valuable and calculated to give relief in a great number of cases. Ankylosis and large abscesses are contraindications to its employment.

CALOT also *applies this form of treatment to scoliotic patients*, reducing the deformity as much as possible by an apparatus especially constructed for the purpose, or by means of a plaster cast. The jacket should be changed every three months, and, if necessary, the correction of the remaining deformity is attempted each time. From a year to eighteen months are required for completion of the treatment.

ALBARRAN has *removed a kidney for a tuberculous process* eight times with one death. Five of the survivors are apparently definitely cured, having gone from fifteen to thirty months without evidence of further trouble.

Of 11 patients upon whom he performed nephrotomy for tuberculosis, 1 died from the operation, and 7 others died in from three to seven months; hence, in cases of miliary or caseous tuberculosis of the kidney, uncomplicated by pyonephrosis, removal of the kidney is far better than its incision; but in any case one should assure himself of the presence, and as far as possible of the functional activity of the other kidney before performing a nephrectomy. Genital and vesical lesions are rarely contraindications to operation.

FROELICH advocated a *radical cure for hernia in all children over ten years of age*. To save time and avoid hemorrhage, the sac is neither extirpated nor even isolated, but its neck is closed by passing through it one of the sutures used to draw together the pillars of the ring. If the sac is too large for the accomplishment of this procedure, enough of it is isolated to permit of the application of a ligature.

BROCA said that there were undoubted instances of

cure by a bandage when the hernia had existed two years; but that he preferred the radical operation, because the treatment with a truss is so tedious. To suture or ligate the neck of the sac under pretence of hastening the operation, is not a good practice. The radical cure of a hernia depends upon the high dissection of the sac, and when this is well done, it is possible to make a successful operation either with or without buried sutures. Even with a complete dissection, the operation need not exceed ten minutes in length.

Frölich recommended in cases in which pelvic drainage is necessary in the male, that it should be secured through the posterior wall of the pelvis. This is accomplished by following the right border of the cecum, until the finger comes upon the level of the lesser sacrosacral ligament. Then with a Wollfer's clamp, a drain may be pushed through the pelvic wall at this point. The clamp will protrude at about the middle of a line drawn from the posterior superior iliac spine to the most prominent part of the ischium. No one who has not attempted this procedure will appreciate how easily it may be accomplished.

QUENU and HARTMANN presented the *indications for and the operative treatment of cancer of the rectum*, and the different methods thereof. The radical operation in the hands of the best surgeons has a mortality of about twenty per cent., fully thirty per cent. of the deaths being due to sepsis in some form. A high situation of the cancer is no contraindication for operation; secondary deposits in organs within the abdomen of course exist. An iliac fistula should be established at least ten days before the rectal resection, as it is not possible to disinfect the rectum in less time. Then, in spite of the most thorough washing of the bowel with permanganate of potash, nitrate of silver, etc., the task is still imperfect, and immediately before operation the sphincter should be dilated, and the rectum, as well as the lower limb of bowel at the artificial anus, should be swabbed dry with sterile gauze, and finally tamponed.

If the growth involves only the lower bowel, the perineal operation will suffice, even when it has extended to a height of six inches, if the coccyx be removed. If a more extended involvement is present, or if glands, etc., are to be removed, the sacral route is preferable. If the disease is "total," *i.e.*, commencing at the anus and ascending to the third sacral vertebra, the perineal route is again preferable. The anus should be closed, and after the upper cut end of the bowel is sutured, the artificial anus should be made permanent.

In these opinions BOECKEL, GALLET, HEYDENREICH, and others concurred. GALLET called attention to the superiority of the vaginal route for low rectal cancer in the female.

DOYEN and JUILLARD spoke of the relief and prolongation of life to be obtained by an artificial anus. From two three years of comfort is often gained by it. POLLOSSON said that after operation the anus should not be closed. DOYEN does not ordinarily precede the radical operation by an artificial anus; but at the time of the major operation he brings a loop of the sigmoid to the

surface in the groin, and opens it three days later if the patient's condition warrants the additional procedure.

Vienna.

THE ETIOLOGY OF TRACHOMA—TREATMENT OF HAY-FEVER AT CARLSBAD.

At the Imperial Royal Society of Physicians MULLER discussed the *etiology of trachoma*. In the conjunctival secretion of trachoma patients he has found a bacillus morphologically identical with the influenza bacillus. It is 0.2–0.4 μ in length, stains with carbofic fuchsin and alkaline solutions of methyl blue, and does not react to Gram's test. It grows only in media which contain blood. Thus far, as already said, no difference has been found between this bacillus and that of influenza, either in appearance or method of growth, but the investigator refrains from stating that the two are identical. He found this bacillus in eleven out of fifteen trachoma cases, and was unable to find it in the healthy eyes of several patients suffering from influenza. In three instances, the bacillus was demonstrated to exist in the tissues of the conjunctiva almost as a pure culture. In twenty-five cases of non-trachomatous conjunctivitis with abundant discharge it was not found in a single instance. However, out of sixteen cases in a light epidemic of trachoma occurring in a regiment of soldiers the bacillus was only found four times. Under these circumstances it seems probable that the bacillus which was isolated is really the cause of trachoma, although further experiments are desirable, particularly inoculation experiments. It will be very difficult to succeed in the latter because a favorable disposition toward a growth of the bacillus is probably necessary. This would explain, for instance, how trachoma can exist for years in one eye, while the other eye remains unaffected.

At the session of the Vienna Medical Club, held October 20th, MULLER of Carlsbad, described his *experience with a number of American patients suffering with hay-fever*. All of the patients except two were men. All of them were individuals who appeared to be overworked and all of them suffered from gastric and intestinal disturbances in addition to the usual local symptoms of this disease. Treatment was, therefore, directed to the alimentary canal and the upper respiratory tract. Carlsbad water was given in abundance, and the mucous membrane of the nose was touched with a twenty-to-thirty-per-cent. solution of silver nitrate, and immediately thereafter sprayed with Carlsbad water. The effect of the nitrate was to produce an immediate increase of the secretion which was again diminished under the influence of the spray. After about ten applications the irritability was diminished, and the nose touched with a solution of menthol and resorcin, equal parts, in spiritus vini dilutus (3, 3, and 14 parts). By this treatment the patients were not absolutely cured, but they had no further attacks, and were so much improved that they were able to return with comfort to America and without fear of a fresh attack, when in previous years it had been necessary to await the coming of winter before it was possible to go home.

SOCIETY PROCEEDINGS.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Tenth Annual Meeting, Held at St. Louis, Mo., November 9, 10, and 11, 1897.

FIRST DAY—MORNING SESSION.

THE meeting, the sessions of which were held at the Southern Hotel, was called to order by the President, DR. GEORGE BEN JOHNSTON of Richmond, Va.

DR. C. A. L. REED of Cincinnati read the first paper, entitled

GALL-STONES IN THEIR RELATION TO CANCER OF THE GALL-TRACT.

The paper was based upon a report of four cases in which a distinct gall-stone history had preceded that of malignant disease. The diagnosis had been confirmed in all of them by exploratory incision, and in two by autopsy.

CASE I.—Woman, aged fifty-two years. She had hepatic colic during the five preceding years, associated with all of the usual gall-stone symptoms. During the previous thirteen months pain in the right hypochondriac region had been constant. Within the preceding six weeks persistent jaundice had developed. Globular tumefaction was detected below the right costal margin. Exploratory incision revealed primary carcinoma of gall-bladder and gall-tract with secondary development in the liver. Diagnosis confirmed by autopsy.

CASE II.—Male, aged sixty years, who had gall-stones twenty years, confirmed by their frequent passage *per via naturales*. Patient had undergone rapid emaciation, and during the preceding month pain had become constant. More latterly he became profoundly jaundiced. No physical symptoms could be detected. Exploratory incision revealed carcinoma of the gall-bladder and gall-ducts with secondary nodules in the liver. A calculus was found in the common-duct, and disintegrated by needle puncture. Primary recovery with amelioration of all symptoms, followed by death four months later; no autopsy.

CASE III.—Woman, aged forty-five years, who had had hepatic colic for several years. During the preceding six months she had been profoundly jaundiced; lost flesh rapidly. Examination of the blood revealed marked cholemia. There were no physical symptoms in the right hypogastrium. Exploratory incision revealed induration about the head of the gall-bladder and common-duct, to both of which the duodenum was firmly attached for a distance of several inches. A calculus could be felt within the common-duct just within its orifice. This could not be dislodged by prudent pressure or disintegrated by needle. It was delivered by incision through the duodenum. Patient never rallied, but died within thirty-six hours after the operation; no autopsy.

CASE IV.—Man, aged fifty-two years; confirmed alcoholic. Had severe attacks of hepatic pain during preceding fifteen years. Last attack was persistent and continued over six weeks. In addition to the usual symptoms

he complained of sweating and had a vacillating temperature. Operation revealed empyema of the gall-bladder with induration at its duct end. The gall-bladder was stitched to the abdominal incision and drained. Death occurred one week later; autopsy revealed carcinoma of the ducts at their juncture. Numerous small calculi were found in the hepatic duct well up in its main trunk, and in a number of the smaller branches. Multiple abscesses were found in the liver substance.

These cases have a suggestive significance, and point to an etiologic relationship. This is explained by the result of persistent irritation of the foreign bodies upon the mucous surfaces, inducing hypertrophy, cell proliferation, and in the event of the existence of original tendencies to cancer of prenatal origin, induces rapid development of the malignant neoplasm.

DR. EDWIN RICKETTS of Cincinnati reported two interesting cases of cancer which he believes were due to gall-stones. He said Courvoisier had found malignancy in seventy of eighty-four cases of gall-stone.

DR. JOSEPH EASTMAN of Indianapolis reported a case which had come under his observation within the last two weeks and which confirmed the remarks of the essayist. He believes that cancer of the gall-bladder and gall-ducts, as in the uterine cervix, is often the outgrowth of prolonged local irritation.

DR. JAMES T. JELKS of Hot Springs, Ark., has seen cancer of the liver unmistakably produced by gall-stones; hence, the deductions of the author in urging operative interference in all cases to prevent carcinoma of the liver were prudent.

DR. RUFUS B. HALL of Cincinnati expressed himself as being firmly convinced that the deductions drawn from the paper would be sustained by future work in this direction. Nine cases tabulated by him confirmed the conclusions of the essayist.

DR. A. M. CARTLEDGE of Louisville, Ky., said that in many cases presenting a history of the passage of gall-stones, the patient may have had beginning carcinoma of the ducts two or three years previously. He endorsed the views of the essayist relative to operative interference in cases of gall-stones.

DR. L. McLANE TIFFANY of Baltimore thought the causative relation between gall-stones and cancer was not yet well established; but that cancer is frequently accompanied by gall-stones is well known.

DR. THADDEUS A. REAMY of Cincinnati took a more conservative ground, and thought the Association ought not to go on record to the effect, that because gall-stones are associated with cancer of the abdomen, that every man or woman having gall-stones, must necessarily be operated upon lest he or she, as the case may be, may possibly have cancer.

DR. REED, in closing, again emphasized the significance of the persistent coincidence of cancer in long-standing gall-stone disease. His own brief experience embraced cases in which there had been a long-standing gall-stone history.

DISPOSAL OF THE STUMP AFTER REMOVAL OF THE APPENDIX

was the title of a paper read by DR. W. D. HAGGARD, JR. of Nashville, Tenn. The author considered appendicitis preeminently a surgical affection. Isolation of the infected appendix is as essential as the hygienic isolation of any of the infectious diseases. The various methods of disposing of the stump by invagination were discussed, and the modifications and technics employed by Van Hook, Dawbarn, McBurney, Murphy, and Morris were described. The ideal of all surgery is completeness which, when applied to the surgery of the appendix, means total extirpation of the organ. He then described the following method practised by Deaver in suitable cases: After freeing the appendix from adhesions and meso-appendix, the cecum is stripped of its contents and grasped between the fingers and thumb of the left hand, the appendix being held by forceps and cut off flush with the colon, and is then united by continuous Lembert sutures, during which the cecum is still securely held with the left hand just as in a gun-shot or stab wound of the intestine. Sutures may be inserted in two layers: (1) uniting the edges of the wound, and (2) approximating the peritoneal covering to the cecum over it. This method is not applicable to cases where the cecum is bound down by adhesions which prevent its delivery in the abdominal incision. This procedure does away (1) with subsequent perforation of the stump under the ligature from infection in its own cavity, (2) abscess of the wall of the cecum from invagination of the infected stump, (3) continuance of an infective process from stricture of the stump between the distal ligature and the proximal opening of appendix into the cecum, (4) imperfect invagination with incomplete drainage of the stump on account of the cecal wall being thickened and stiffened with inflammatory exudate. The author has employed this method in five cases with entire satisfaction.

REPORT OF FOUR CASES OF ABSCESS OF THE UTERUS,

was the title of a paper read by DR. GEORGE H. NOBLE of Atlanta, Ga. The first case was one of puerperal origin, the operation being done at the end of the second week. There was a pus-tube and abscess of the left ovary. The appendages on the right side were normal. After separating extensive adhesions for unilateral disease, an abscess of the fundus uteri about the size of an ordinary lemon was discovered which was excised, curetted, and cauterized with carbolic acid. The cavity extended from the median line to the stump of the appendages on the left side, which latter was turned into it, and fastened with sutures to prevent the formation of a dead space. A glass drain was placed in Douglas' pouch after flushing the abdominal cavity. The woman made an uneventful recovery, and has continued to be without pelvic disturbance. The histories of three other cases were detailed by the author. The four cases show what a surgeon will sometimes do for a septic uterus when given a chance. They also support the view that it is not always necessary to extirpate the uterus in suppurative inflammation of its parenchyma, and that such operations should be confined to cases in which the uterus is thoroughly septic or riddled with abscesses.

DR. A. M. CARTLEDGE said that the results following

the method pursued by the essayist were better than those of hysterectomy for infected uteri complicating the puerperia.

DR. J. WESLEY BOVEE was pleased with the advanced position taken by the author of the paper. Gynecologists had to fear, however, that, following this method, the future usefulness of the uterus might be impaired; it might tend to the production of rupture of the organ during subsequent labors.

DR. T. J. CROFFORD said that in cases of abscess of the uterine wall originating from the mucous membrane, if the cervix is dilated, the uterine cavity emptied with a curette, thoroughly cleansed and packed with iodoform gauze, these abscesses will open through the endometrium, which event will be followed by relief in the majority of cases.

DR. RICHARD DOUGLAS treats cases of infection following abortion or full-term labor by the Carossa method with decided benefit.

DR. W. E. B. DAVIS said that uterine abscesses complicating the puerperia can be successfully treated by incision and drainage in a large proportion of cases, even though they extend beyond the uterus. Illustrative cases in which this treatment was employed were cited.

DR. R. M. CUNNINGHAM said it was extremely difficult in general surgery to get primary union after curing and disinfecting abscesses, in that it was almost impossible to destroy the staphylococci, and more particularly the streptococci, which perhaps have already extended beyond the abscess wall.

DR. NOBLE, in closing, emphasized the point that the uterus is the seat of infection, and not the appendages. Only in cases where there are one or two, or possibly three abscesses, is this method of treatment applicable.

A paper, entitled

A STUDY OF RETROPERITONEAL NEOPLASMS AND SUPPURATIONS WITH SPECIAL REFERENCE TO DIAGNOSIS,

was read by DR. RICHARD DOUGLAS of Nashville, Tenn. The author accepted the definition of Mr. Lockwood of a retroperitoneal neoplasm; *viz.*, a solid or cystic tumor growing behind the peritoneum into the fold and not connected with any of the great retroperitoneal organs. He then dwelt at length upon the pathology of these growths and their causation. While not an advocate of the use of the aspirator in intra-abdominal diagnosis, yet, under proper conditions, the author thought that this instrument will reveal valuable evidence, not only as to whether a growth is solid or cystic, but as to its character. In retroperitoneal sarcoma aspiration reveals only a little blood or blood-serum in the needle. This sign enabled Weir and Bull to correctly diagnose a case reported by Devlin.

TUBAL AND OVARIAN HEMORRHAGE RESEMBLING RUPTURED ECTOPIC PREGNANCY,

was the title of a paper by DR. J. WESLEY BOVEE of Washington, D. C. The author said that a few years back pelvic hematocele was a condition which every practitioner appeared to meet occasionally, and many were the

supposed causes of it. When the subject of ruptured tubal pregnancy was so universally studied some of the most aggressive investigators told us to search in every case of pelvic hematocele and a ruptured ectopic pregnancy would be found. This dictum, though not endorsed by all observers, found a ready following, and up to the present time the majority of students of diseases of the female pelvic organs have accepted it. Many cases have been reported in which a presumptive diagnosis of ruptured tubal pregnancy has been made—cases in which such symptoms as shock, sharp pain, irregularity of menstruation, even amenorrhea, the presence of a small tumor in the pelvis, and possibly a fatal termination, and yet autopsy failed to reveal pregnancy; but, instead, hemorrhage from a Fallopian tube, ovary, or both. The speaker offered conclusive evidence against the positive statements which have been made. There are many instances in which women are deeply wronged by these diagnoses. These hemorrhages result from ectopic pregnancy, from malignant disease of the uterus, appendages, or rectum; from varicose veins of the broad ligaments, from disease of the appendix, from inflammatory disease of the tubes and ovaries, and from many other causes.

FIRST DAY—AFTERNOON SESSION.

DR. J. G. EARNEST of Atlanta, Ga., reported an interesting case of

EXTRA-UTERINE PREGNANCY OPERATED UPON AT THE SEVENTH MONTH.

The patient was thirty-six years of age, and the mother of seven children. She came under his care September 19, 1897. Five months before he had been called to see her on account of a profound collapse which threatened life. A history of irregular uterine hemorrhages was elicited, and he made a diagnosis of ruptured tubal pregnancy on the left side. Operation was deferred at this time, for the reason that it was feared the patient would die under the anesthetic. Nothing further was heard from the patient until the date mentioned, when the abdomen was found distended by a tumor on the left side and in the center as high as the umbilicus. On the right side was another apparently distinct cyst filling that side of the pelvis, and extending well up into the abdominal cavity. On opening the latter a large tumor, occupying the center and left side, presented. Its surface was somewhat irregular, very dark in color, and traversed in every direction by large blood-vessels. The enlarged uterus was enclosed in this mass. The tumor of the right side was about the size of an adult head, and seemed to be distinct from the larger one, the dividing line dipping down between them about half the diameter of the mass. To the larger growth was attached several coils of intestine, which were dark and changed in texture at the points of contact. The cyst on the right side peeled out without much hemorrhage. But an appalling flow of blood began with the work of peeling the placenta off from the pelvic and abdominal walls. Peeling it as rapidly as possible, the mass was loosened and iodoform gauze quickly packed behind it. The cyst was still unbroken, and had the appearance when lifted up of being a fibrocystic tumor of the

uterus. The author concluded to remove the uterus and drain through the vagina. As the uterine arteries could not be reached a wire attached to a *serra naud* was thrown around the uterus, tightened, and the mass cut away. The patient was now in such a critical condition that the author abandoned the idea of draining through the vagina. He tied the uterine and ovarian arteries, and packed the cavity with iodoform gauze, which was brought out at the lower angle of the wound, and closed the abdomen with silkworm gut. The gauze was removed on the sixth day. On the eighth day fecal matter passed from the drainage tract. From this time until she left the hospital, October 30th, most of the feces passed by the fistula. Five days later she was having free rectal evacuations with a corresponding falling off of the fecal discharge from the fistula.

The large tumor was entirely covered by an enormously expanded placenta beginning in the bottom of the pelvis, and firmly attached to the pelvic and a portion of the abdominal wall, its villi reaching well down into the tissues. From the top it was deflected from the abdominal parietes over and beyond the center, everting the body of the uterus. In the cyst thus formed a fetus of about seven months was found.

DR. L. McLANE TIFFANY of Baltimore read a paper, entitled

CYSTIC DISEASE OF THE MAMMA.

He said that the occurrence of cysts as a confusing element in the course of solid tumors of the breast is not so uncommon and might greatly resemble the subject dealt with in his paper, yet the clinical history and anatomy of cystic adenomata is sufficiently clear and the prognosis sufficiently important to justify careful study. In most cases an accurate diagnosis could be determined before operation. Dr. Tiffany reported eleven cases which showed many symptoms in common.

DR. A. V. L. BROKAW of St. Louis, Mo., made some remarks upon

THE X-RAY AND ITS APPLICATION TO SURGERY, and exhibited 200 radiographs. He showed excellent radiographs of the heart, thorax, fractures of the dorsolumbar vertebrae, pelvis, and fractures and lesions of the long bones. Of the many hundred exposures he has made, he has yet to see harmful effects following the use of the X-ray.

SECOND DAY—MORNING SESSION.

DR. D. F. TALLEY of Birmingham, Ala., read a paper on

CHRONIC PROCTITIS.

He dealt with two varieties of non-specific chronic proctitis: (1) Those cases in which a diffuse, persistent inflammation, superficial ulceration, and papillomatous vegetation are the prominent features; (2) those in which the submucous tissues are principally involved in the hypertrophic process, causing a proliferative stenosing proctitis. The main symptoms of these two forms of proctitis were described. Rest in the recumbent position was recommended as being of paramount importance in the treatment of the first form of the disease. The diet

should be of a liquid character, bland, and nutritious. In the absence of ulceration, where there is a diffuse chronic inflammation, the mucous membrane should be mopped with a strong silver or copper solution. The after-treatment consists in putting the patient to bed, washing the rectum daily with warm boric-acid solution, and the use of suppositories of iodoform and boric acid. In chronic cases in which the ulcers are extremely indolent, the solid stick of silver nitrate or a crystal of copper may be used. In these cases it is necessary to make repeated applications before the ulcers become healthy and begin to heal.

DR. WM. H. MYERS of Fort Wayne, Ind., read a paper on

THE EARLY DIAGNOSIS AND TREATMENT OF CANCER OF THE UTERUS,

in which he first dwelt upon the various theories respecting the nature of cancer, the last theory being that the disease is purely local in origin. The author dealt with the elements of diagnosis, and gave the statistics of the results following operations by different authors for this disease. He considered that the value of the microscope as an aid in the clinical diagnosis of cancer has been overestimated, and quoted several high authorities in support of this opinion. He closed by saying that the knife had become the emblem of gynecologic treatment. It had supplanted the curette, intra-uterine injections, caustic applications, the quaint conceits of the monkish craft, and the brutal records of the cancer cure. The knife had become, in a surgical sense, the specific therapy of this particular disease.

SECOND DAY—AFTERNOON SESSION.

DR. F. D. THOMPSON of Fort Worth, Tex., reported

A CASE OF TETANUS FOLLOWING A SURGICAL OPERATION.

The patient, a male, was twenty-one years of age, with a good family history, for whom a radical operation had been performed for extensive varicocele. Thorough asepsis was carried out. The result of the operation was excellent; yet on the morning of the ninth day after operative interference the patient could not open his mouth very well, and there was more or less stiffness about the muscles of the neck. A diagnosis of incipient tetanus was made, and the patient died less than three days after the first appearance of the tetanic symptoms. The speaker could not account for the infection with the bacillus of tetanus.

At this juncture the President, DR. GEORGE BEN JOHNSTON, delivered an address. He selected for his subject

THE PREVALENCE OF SPECIALISM AND WHO SHALL BE SPECIALISTS.

The tendency of the times was toward specialism in medicine. Specialism is desirable because it gives to the profession and the people the most intelligent consultants and the most skilled attendants the art of medicine can supply. He divided specialists into two kinds: the *true* and the *false*. The former he defined as one distinguished

for learning and skill in a given pursuit; the latter as one having merely a special occupation. He made the difference between these varieties very clear; for one reached the distinction of a specialist by reason of his training, experience, skill, and wisdom; whereas, the other was made a specialist by the possession of a diploma, a door-plate, and a "kit" of special instruments. The professional qualities of the true specialist he likened to a massive pyramid, the finished capstone of which constitutes the specialty. This pyramid of experience, learning, and skill is a stable edifice, a pillar of strength which cannot topple or reel. In the case of the pseudospecialist this pyramid of learning is inverted. There is no base of a knowledge of detail, of general information, of professional attainments. The structure has no foundation in fact. It began with the specialty, and its growth spreads as it ascends, overshadowing what is below, thus rendering it an unstable, top-heavy structure. The public has been improperly educated in the idea of specialism. In its eye all specialists stand upon the same footing, all possessing the needful requirements to give the best service. The profession has misled the public and is responsible for this lack of discrimination. Medical colleges should vigorously discourage the practice of recent graduates becoming specialists. Teachers should point out to them the error they are about to commit. Colleges should recognize only the real specialists. Reform in the present system of specialism must be accomplished through the instrumentality of medical colleges and societies, and when they take the matter properly in hand, the general profession and public will lend cordial support and the evil will vanish.

A paper, entitled

OVARIOTOMY IN THE AGED,

was read by DR. A. M. CARTLEDGE of Louisville, Ky. The patient upon whom the operation had been performed was born October 29, 1816. Eighteen months before the speaker saw her an abdominal enlargement was noticed, followed shortly after by pressure symptoms. Latterly the gastric and digestive disturbances from pressure had been very troublesome; emaciation and ovarian expression appreciable, but not marked. Examination revealed that the abdomen was well filled with a cystic growth, which was diagnosed as ovarian. Naturally the great age of the patient—past eighty years—made the decision as to operation a debatable one. However, an operation was deemed justifiable, urged, and consented to, and was performed May 12, 1897. The ovarian cyst originated from the right ovary, was multilocular, and, with fluid and omentum, weighed about forty pounds. The operation consumed fourteen minutes. The patient sat up fourteen days after the operation, and left the infirmary on the seventeenth day.

DR. H. H. GRANT of Louisville contributed a paper on OPERATIVE TREATMENT FOR ENLARGED PROSTATE, in which he drew the following conclusions: (1) That in malignant disease any operative step except palliative suprapubic drainage, even if based upon an error in diagnosis, is a serious mistake. (2) That in myomas, fibromas, and adenomas it is yet uncertain that good results will follow

castration, and, furthermore, that such conditions render enucleation by the Alexander method very difficult, and perhaps impracticable. Hence, when the interference resists catheterization and is not remedied by the permanent catheter, as suggested by Kern, suprapubic section and removal of the projecting portion, if possible, or the permanent fistula of McGuire, is the wisest course. (3) In conditions including stone in the bladder, suppuration in the gland, and the suspicion of intravesical growths, exploration by the suprapubic method offers the best insight into the nature of the lesion, as well as the most hopeful prospect of relief. (4) Inasmuch as castration is unsatisfactory, and is less acceptable to men under sixty-five years of age than later, it appears that the commonest form of enlargement, the chronic parenchymatous, to which the operation of Alexander is especially appropriate, will be best treated by this method, provided it appears practicable or necessary after section, which, if it bears out the promise of the present, will surely take a high place in the future, as it has almost no disadvantages aside from the seeming gravity of the step.

THIRD DAY—MORNING SESSION.

DR. RUFUS B. HALL of Cincinnati read a paper, entitled

IMPROVED TECHNIC IN OPERATION FOR INTRA-LIGAMENTOUS CYSTS.

After reviewing the literature of the subject, the Doctor said he believes the mortality from operation for intra-ligamentous cyst is much higher than the statistics would lead one to think. A large percentage of the deaths are due to hemorrhage, either on the operating-table or within a few hours after the patients are put to bed. He thought the operation proposed by him will save many lives, as it is practically bloodless. It is applicable to those cases in which the adhesions are very firm and the cyst cannot be easily stripped from the pelvic floor. The operation he proposes is as follows: First tap the cyst and empty it. Ligate the ovarian artery on the tumor side at the pelvic border; ligate the ovarian artery on the opposite side, outside the healthy ovary; divide the broad ligament. Divide the peritoneum above the top of the bladder and push the bladder down. Ligate the uterine artery on the healthy side. Cut across the cervix and clamp or ligate the uterine artery on the tumor side. The blood-supply is then cut off, and the patient has not lost a dram of blood. The capsule of the tumor may now be divided above the top of the bladder at a suitable point behind, and the tumor enucleated from below upward with a very much greater ease than from above downward and with corresponding safety to the ureters, rectum, and iliac vessels. Close the peritoneum over the pelvic floor with a running suture of catgut. This method brings every part of the field of operation into view. The ureter may be seen, recognized and pushed aside. The adhesions are separated along the line of cleavage instead of against it as in the old method.

SYMPHYSEOTOMY AS COMPARED WITH OTHER OBSTETRIC OPERATIONS.

This paper was read by DR. GEORGE J. ENGLEMAN of Boston. The author illustrated his remarks by diagrammatic

sketches. Symphyseotomy is not as attractive an operation as is Cæsarean section or the Porro operation, yet it is very successful as compared with the results of the former procedure. It is a successful all-round operation for the city and country. The mortality statistics of the different operative procedures were given and compared. There has been no trouble in getting union of the pubic bone after symphyseotomy. Quite a number of women have been delivered by a second symphyseotomy. There is no trouble in the locomotion of women so operated upon. A number of cases are on record of normal labors which have followed symphyseotomy. The first symphyseotomy in this country was performed by Dr. Williams of Dennison, Texas. Dr. Englemann showed what had been accomplished by the operation, and said that surgeons must be guided in a measure by the quoted results.

PLASTER OF PARIS AS A UNIVERSAL FRACTURE DRESSING,

was the title of a paper by DR. JOHN B. S. DAVIS of Birmingham, Ala. The author finds that less than 3 per cent. of the physicians who use plaster of Paris as a primary dressing cut the plaster at the time of applying it. The object of incising the plaster of Paris is to allow it to yield and at the same time fit the contour of the limb. For fractures of the shaft of the humerus, as elsewhere, he believes plaster of Paris is the best dressing.

The following officers were elected for the ensuing year: President, Dr. Richard Douglas of Nashville, Tenn.; vice-presidents, Drs. H. H. Mudd of St. Louis, and James A. Goggans of Alexander City, Ala.; secretary, Dr. W. E. B. Davis, Birmingham, Ala.; treasurer, Dr. A. M. Cartledge, Louisville, Ky.

The next meeting of the Association will be held at Memphis, Tenn., the second Tuesday of November, 1898.

REVIEWS.

INTERNATIONAL CLINICS. A quarterly of clinical lectures. Edited by JUDSON DALAND, M.D., J. MITCHELL BRUCE, M.D., F.R.C.P., and DAVID W. FINDLAY, M.D., F.R.C.P. Volume II., seventh series. Philadelphia: J. B. Lippincott Co., 1897.

THE present volume contains contributions on treatment, medicine, neurology, surgery, gynecology and obstetrics, ophthalmology, laryngology, and dermatology. The selection of topics is good, and the lecturers by well-known clinicians. There is a great temptation in publishing a series of lectures to insert inferior productions. Such has not been the case with the editors of "International Clinics," who, in each succeeding volume, prove the value of carefully chosen and instructive lectures. These lectures must be particularly valuable to those to whom attendance at clinics is impossible. This volume is splendidly made and handsomely illustrated.

URINALYSIS: A GUIDE FOR THE BUSY PRACTITIONER. By HEINRICH STERN, Ph.S., M.D. New York: E. R. Pelton, 1897.

THIS little volume will prove very useful to the physicians in general practice, as it covers the ground of uri-

nalysis in a clear, concise, and practical manner, and avoids all unnecessary details and refinements of methods. Exception must be taken to the following statement, however: "Pathogenic bacteria, so-called, are said to occur in the urine in two varieties—as micrococci and bacilli. A number of micrococci and bacilli do certainly occur in the urine. In the estimation of the writer, however, they are not pathogenic, nor does their presence aid and establish a trustworthy or rational urinary diagnosis." With this exception the book is well up to date. Every alternate page is left blank for notes, and several wood-cuts of the various crystals and casts illustrate the text.

THERAPEUTIC HINTS.

A Local Application for Tuberculous Laryngitis.—First, anesthetize the larynx by means of a 10-per-cent. solution of cocaine, and then, beginning with the weaker solution, apply the following:

R	Ac. carbolic	. . .	m.xv — lxxx
	Ac. lactic	. . .	3 ss — iv.
	Glycerini pur.	. . .	3 v.

For Chilblain.—

R	Calcii chlorid.	. . .	gr. i
	Ungt. paraffin	. . .	3 i.

M. Sig. Apply with gentle friction for five minutes at bedtime, and then cover with a bandage.

Diuretin in Acute Nephritis.—This drug is valued by STEINER for its efficiency in causing diaphoresis and lessening the dropsical symptoms. It may be prescribed as follows:

R	Diuretin	. . .	gr. lxxx
	Syr. simp.	. . .	3 v
	Aq.	. . .	3 v.

M. Sig. One tablespoonful every two hours.

For the Relief of Painful Affections of the Bladder, Prostate, or Urethra the following have proven efficacious:

R	Morphin hydrochlor.	. . .	gr. ii
	Atropin sulph.	. . .	gr. 1/4
	Aq. dest.	. . .	3 iii.

M. Sig. From 30 to 80 drops should be injected into the rectum. In addition, should fever be present, the following is advised:

R	Cocain	. . .	gr. xiv
	Antipyrin	. . .	3 iiss
	Sod. salicyl. } aa.	. . .	3 iiss
	Aq. dest.	. . .	3 iii.

M. Sig. Inject 80 drops per rectum three times daily.

For Pelvic Peritonitis and Peri-uterine Exudate.—

R	Iodol.	. . .	3 iss
	Ext. glycyrrhizæ	. . .	q. s.

M. Ft. pil. No. LX. Sig. One pill four times daily during four days, and then gradually increase until 10 pills daily are taken.

Within five days there will be a decrease of pain, fever, and abdominal tension, and the exudate will be quickly resorbed.

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ORIGINAL ARTICLES.

MAJOR LESIONS OF THE GENITAL TRACT IN THE PUERPERY.¹

By S. MARX, M.D.,
OF NEW YORK;

ASSISTANT SURGEON TO THE NEW YORK MATERNITY HOSPITAL.

SOME years ago I observed two cases of uterine rupture occurring during labor, both of which terminated fatally. In the first the rupture took place at the site of a large diphtheritic ulcer; the other was subsequent to a very difficult forceps extraction. During the past two years I have seen a remarkable number of complicated obstetric or puerperal conditions from which some instructive lessons may be drawn.

Grave lesions of the genital tract are not common. When they do occur, it seems impossible in most instances not to associate them with errors in technic on the part of the physician in charge. Spontaneous ruptures of the uterus are very rare, but in them, as a rule, there has been so marked a degeneration of the uterine tissues preceding the accident, from either a fatty or cancerous process, as to stamp them as eminently pathologic. In this paper normal uteri and normal pre-existing states are exclusively considered. The most difficult problem in midwifery, and one requiring the most discriminating judgment is to determine clearly and positively the indications for interference or non-interference. The former is too frequently postponed to such a time as to place elective and successful operations out of the question. When well-defined indications are present all hesitancy and fear should be banished and the necessary procedure instituted promptly and "with brains."

It is seldom that active interference is demanded on behalf of the child; it is the mother who requires our constant attention. When a dangerous condition is imminent, the signals are always present, and display themselves in aberrations of pulse and temperature. In extreme cases there is an acute, constant pain in the abdomen, not the alternating relaxing and contracting phenomena of labor, but a tetanic contraction which is so characteristic of one form of uterine exhaustion or irritability. It is a constant, dull, aching, boring pain. In still more severe cases the presence of the contraction ring may be noted, with a corresponding thinning of the en-

tire lower uterine segment, extending at times as high as the umbilicus. Again, by abdominal palpation the outlines of the child may be mapped out with alarming distinctness. These, in short, are the real urgent premonitory signs of true uterine exhaustion which, when exaggerated, become pathognomonic of uterine rupture. When a rise in temperature with a corresponding pulse-rate is present, or where the pulse becomes progressively more rapid, especially between the pains, the indications are to terminate the labor at once, always remembering not to endanger the integrity of the maternal parts by the interference.

If the os is not sufficiently dilated to permit of the application of forceps, manual dilation or the Dührssen operation should be performed. The field for the latter procedure is extremely limited, but when called for in urgent cases it can be rapidly and safely done. When rupture is threatened or has already occurred, there is certainly a distinct indication for its use. But it must be remembered, to make the operation a safe one, that the incisions should be complete from the cervicovaginal junction downward, neither more nor less, in order to fully dilate the os by artificial means.

While I am radically opposed in most cases to the use of the forceps when the head is above the pelvic brim (the so-called high-forceps operation), I see an indication in such threatened or already present uterine rupture for instrumental termination of the labor in preference to version. Under all other conditions and circumstances I prefer, in these cases, the latter operation. The fear of causing a rupture or increasing the extent of the tear is my only excuse for making these the exception. In the large number of the more exaggerated cases we can and do expect that the child has already been suffocated, and for this reason the perforator is the instrument of choice. When an impacted shoulder is a complication, it would seem preferable to at once detruncate the head regardless of whether the child is dead or alive; since here, by performing a forced version, the mother is subjected to the most awful risk of either rupture or increasing the lesion already present. Under these conditions the chances are most decidedly against the birth of a living child. Here again, in weighing the chances between a forced version of an impacted, living baby and a Cæsarean section, it would appear that the chances for mother and

¹ Read before the Harlem Medical Association.

child will be best conserved by the latter operation. Where the child has wholly or in great part escaped into the peritoneal cavity, I think we are fully justified in at once subjecting the woman to a celiotomy, so as to not only remove the fetus, but to treat the uterine wound by suture, or in extensive lesions to extirpate the organ *lege artis*.

The first case presented is a typical example of uterine rupture in a woman pregnant for the second time and in labor forty-eight hours:

CASE I.—Stout, healthy woman, whose first labor had been short and normal. The labor began with good, hard pains, which continued twenty-four hours. In spite of an os fully dilated, the head rested quietly at the brim, apparently in a normal position. This patient was first seen by a physician who, while recognizing the fact that the woman could not deliver herself, advised delay, and this in the face of a rapid pulse and extreme suffering. Within another twenty-four hours she finally worried a dead baby into the world. At this time her temperature was 103° F.; pulse, 124; abdomen enormously distended. The placenta came away spontaneously. Shock was profound, and the condition went from bad to worse. She developed the symptoms of rapid and general sepsis, and within thirty-six hours all the evidences of an acute general peritonitis were present, with severe, continuous, and uncontrollable vomiting. When I saw the patient a few hours later she was completely collapsed; pulse, 150; temperature, 104° F.; intensely distended peritonitic abdomen. The fundus of the uterus could not be felt, and there was a foul-smelling discharge from the vagina. The history of the case made me at once suspect uterine rupture, and upon vaginal examination two fingers could be readily passed posteriorly through the inferior uterine segment and into the peritoneal cavity. The condition was apparently due to prolonged pressure by the head, subsequent sloughing, and final rupture. Active stimulation was the only treatment advised, and, as might be expected, the patient died within twelve hours.

The patient, the history of whose case has just been told, evidently possessed a normal pelvis; for she had previously given birth to a living child. The tardy labors were probably due to a malposition of the head, very likely an occipitoposterior position. There is very little doubt, had the physicians acted when premonitory symptoms presented themselves and delivered her at once, the case would probably have terminated differently; and yet, in spite of classic symptoms (temperature, rapid pulse, and agonizing pain) of grave exhaustion, this woman was left unaided, the physicians thinking that the physical disturbances were but momentary, and that as she had delivered herself once normally, she could do so again.

The next case is another example of uterine rupture, due to the application of the forceps when the

head was above the brim, the head being in a vicious position.

CASE II.—Mrs. M., whose previous labors had all been normal and of average duration. This, her fifth labor, continued longer than the other four together. The waters were early discharged, and the os slowly dilated under the influence of slow nagging pains. After many hours of fruitless effort, seeing that the labor would have to be terminated by artificial means, the physician in charge, while fully recognizing that the head was deflected and above the brim (really an ear presentation since this was the only part of the head to be readily made out), applied the forceps under deep chloroform narcosis. No sooner had the necessarily powerful traction been instituted, than the anesthetizer reported a rapid and flickering pulse. This was followed by instant collapse of the patient, associated with a very marked and rapidly increasing tympany of the abdomen. The child was born alive; placenta and membranes expressed. The collapse continued forty-eight hours, and the treatment, which consisted of saline injections and the administration of heart-tonics, was instituted under the impression that the case was one of heart failure from chloroform. About this time I was asked to see the patient and found the condition a desperate one. Shock profound; pulse rapid and hardly perceptible; temperature, 103° F.; foul lochia, and a very intense tympany of the abdomen. Here again the history was so suggestive that a presumptive diagnosis was made before examination. Exploration with the hand revealed a complete uterine rupture, a clean tear of the lower, right, uterine segment, extending into the corresponding broad ligament. The entire vagina and vulva were emphysematous. The uterus was washed with a physiologic salt-solution, preceded by the guarded use of a large blunt curette, avoiding as much as possible the neighborhood of the lesion. The entire rupture was tamponed with iodoform gauze, and active hypodermic stimulation advised. The patient died three hours after my visit.

This case is of great interest, and the lesson to be learned thereby of the greatest value. Was the physician in attendance justified in the use of the forceps in this case? It has been my contention that the application of forceps above the brim is very, very seldom justifiable. When the head fails to engage, there is always reason to suspect either a relative or absolute pelvic contraction, or what is more frequent, a malposition of the vertex, if this presents. For this reason it would seem advisable to perform version at once, since a malposition of the vertex can rarely be permanently rectified, and further it is easier to deliver the after-coming head following version, through a contracted pelvis than to complete delivery by the use of forceps when the opposite presentation obtains. Manual rectification of the head has been tried by many, especially in occipitoposterior positions of the vertex, and found wanting.

I have tried it on many occasions, and have almost always failed; because the causes originally producing the faulty position will, in the greater number of cases, reproduce it even after rectification has been complete. Again, it is my contention that when once the hand is in the uterus, attempting to correct a malposition, it is but one step further to do a version and at once terminate the labor, thereby performing what is a certain and positive procedure instead of one that is at best purely experimental and likely to fail.

In the case in question a pelvic contraction did not exist; as has been stated the pains were slow and nagging; there was early discharge of the waters, and a disinclination of the head to engage. I have always associated this symptom complex with, and very characteristic of, malpositions of the vertex, especially occipitoposterior positions, in the absence of a pelvic deformity, and in not a few cases a diagnosis of a posterior occiput has been made, even before examining the patient. In the face of these symptoms, the hand was introduced and the position of the head determined under chloroform narcosis. Since these symptoms were present, it was the duty of the attending physician by exploration to find out why the head failed to engage. He should have reached a positive conclusion as to the conditions present before applying the forceps. This is a "never to be forgotten rule." This woman would have stood a fair chance of recovery had a manual rectification of the head been accomplished, or what would have been still better, an internal version.

CASE III.—Multipara, whose previous labor had been normal. The pains began at 5 A.M., with a typical transverse presentation, one arm appearing in the vagina. Repeated, ineffectual attempts at version were made until about 3 P.M. the same day, without anesthetic and without result. Another attempt was made under chloroform by a different physician, who, upon realizing the gravity of the case, refused to persist, and I was asked to see the patient and found that two hands had already been delivered, and that the child was bent on itself, with the head and both feet on a level near the fundus. The child, of course, was dead. The uterus was moderately tetanic and a faint contraction ring evident; profuse hemorrhage; pulse, 80; temperature, apparently normal. Decapitation, on account of the position of fetus, was utterly out of the question, and as the fetus was not impacted, it was thought advisable to attempt version under deep chloroform narcosis. This was easily accomplished and the child delivered. At this time the family physician volunteered the statement that he had early that morning discovered a strange cavity with whose anatomy he was not familiar. This information came after I had completed the labor and found the entire vagina pulled away from the uterus through the cul-de-sac, and a corresponding hole in

the uterus at the cervicovaginal junction. This large hole allowed the entire hand to pass readily into the peritoneal cavity. After delivery the pulse was normal, and there were no symptoms of collapse. The uterus and peritoneal cavity were washed out with a physiologic salt-solution; the lower peritoneal cavity was tamponed with sterilized gauze. The patient was put to bed with good pulse, no hemorrhage, and in very good condition. On the sixth day, symptoms of general peritonitis appeared. The gauze was removed under chloroform, and the whole peritoneal cavity was found to be shut off by a broad area of fresh adhesions. A simple drain was introduced. The patient developed a well-marked general peritonitis, and succumbed within twenty-four hours.

This case requires no comment. But a word as to the method employed in delivering the patient: Because of the presence of a dead child, the treatment would seem to have been paradoxical. Decapitation was out of the question. Total embryotomy would have been such a prolonged operation that it seems to me that I was justified in performing a version. In the event of failure, on account of impaction of the fetus, Cesarean section would undoubtedly have been the operation indicated. Another fact worthy of mention is the normal pulse and temperature, and the absence of shock in the presence of so grave a lesion, which continued up to the time of the occurrence of the general peritonitis.

CASE IV.—Multipara; previous labors normal; two weeks before full term. She had not felt life during the five previous days, and she informed her physicians that her baby was probably dead. Os was rapidly and fully dilated; membranes were ruptured; waters badly colored and offensive escaped; head presented, but did not engage. Forceps were applied, traction made, and the physician found himself, head grasped by the forceps, on the floor. The head had parted from the trunk. The arms were pulled down, traction made, and they in turn were torn off. The sharp hook was then introduced deeply into the neck and chest, but as soon as traction was made it pulled through the fetal tissues and failed to deliver. When I saw the patient, at this time, she had been under chloroform about two and one-half hours. She looked very bad, and presented a rapid respiration and a rapid, flickering pulse. Having no instruments with me, version was readily accomplished, and traction on both legs combined with firm external pressure, delivered what remained of the fetus, but only after pulling off one of the legs. The placenta and membranes were removed. Examination revealed a tear of the vagina on the right side, extending from the cervix to the right pelvic wall through the broad ligament and into the peritoneal cavity. This evidently occurred when the sharp hook slipped, tearing not alone the fetal structures but the maternal tissues as well. The cavity was drained by means of gauze, and in spite of stimulation, the patient died within two hours.

CASE V.—Multipara; previous labors all very difficult; present labor very tedious, lasting nearly forty-eight hours; child macerated, pieces of skin being discharged. Head above the brim in the L. O. A. position. The physicians in charge did a version to terminate the labor. Traction was made by grasping both legs, which promptly parted from the trunk. At this stage I was asked to see the case. The pelvis was very small; the estimated true conjugate diameter could hardly have been more than two and one-half inches. An irregular mass presented at the pelvic inlet which evidently was the lower part of the abdomen, the pelvis and lower extremities having been torn away. On examination a piece of bony structure was found to be deeply imbedded in the uterine wall. The patient collapsed from the prolonged interference and chloroform narcosis. Evisceration and embryotomy were undertaken, the last of the fetal parts being removed only after one and one-half hours of very trying work. During one of the numerous attempts to dismember the child, a hole was torn in the posterior vaginal wall. The uterus and vagina were tamponed with sterilized towels. Regardless of stimulation the patient died from exhaustion within forty hours.

In the two cases, whose histories have just been related, forceps were applied in one, and in the other a version was performed, both measures being instituted in the presence of a dead and macerated fetus. Would not better results have been obtained had the heads been perforated at once? In the first case the head was torn from the body during an attempt to deliver; but had the skull been opened, thus diminishing its circumferences, less resistance would have been offered and the chances are that, with the cranioclast, delivery would not have been so complicated. In the second case, version should not have been done, since nothing could be gained by this operation; for there was present a dead baby and a very much contracted pelvis, a pelvis offering almost an absolute indication for Cæsarean section. Perforation is a very simple operation, and should, in my opinion, always be the operation of election in the presence of a dead child. It will certainly prove safer than a difficult forceps delivery or a forced version, with their attendant dangers to the mother. The plea may be offered by many that it is sometimes impossible, by auscultation, to certify as to the life or death of the child, and as embryotomy on the living child is considered by many to be unnecessary and reprehensible, it might hold good. But, to be certain, it should be remembered that the introduction of the hand into the uterus and direct palpation the cord will furnish the necessary evidence. Again, in the second case, when it was found that both legs were torn off, the physicians should not have persisted in their efforts; for a method occasionally used by the writer might have proved of material assistance

in delivering the rest of the baby. In cases of impacted breech with a dead baby, where, as it sometimes occurs, it is impossible to grasp a member to further delivery, I have employed the cranioclast, introduced into the rectum, taking a good bite of the sacrum and lower spinal column, and preceding the introduction of the instrument by enlarging the anal orifice by means of liberal incisions with scissors. In this way a good hold on the fetal body is obtained, which rarely fails to be efficacious.

CASE VI.—Primipara, with a normal pelvis, in labor twenty-four hours. When the first stage was completed, the forceps was applied, followed by delivery of a living child. I was requested (four hours *post-partum*) to sew up an ordinary perineal laceration. In trying to obtain a history of the case, the attending physician gave rather meager and confusing data. To my dismay, on examination, although the condition of the patient was excellent, there was a complete tear of the vagina and rectum extending as far as the eye could see and the finger reach. Having nothing better with me, I employed both hands as a speculum in order to separate the walls of this great cavity. There appeared to be gut at the bottom of Douglas' cul-de-sac, prolapsing slightly into the vagina. The parts were thoroughly washed with a 1-10,000 bichlorid solution, and being unable to apply sutures at this depth, the upper part of the vagina was snugly tamponed with gauze to protect the gut. The vagina and rectum were sutured with catgut, and the anus and perineum with silk-worm gut. The gauze was removed on the fourth day, and the stitches on the tenth. At this time union was almost perfect, and the patient recovered after a practically normal convalescence.

What caused this terrible lesion I am not in a position to state positively. I could glean nothing from the family physician, who evidently knew more than he wished to tell. It is safe to assume that, the patient being a primipara with a normal pelvis, the presenting head would engage; and, again, that the head was in a normal anterior position was positively proven by the presence of a well-marked *caput* situated well back over the parietal bone. Both these statements fairly show that forceps was not applied to the head above the brim. By carefully weighing all the factors in the case, it can at least be safely assumed that the lacerations were either due to a forcible and unwarranted effort in the introduction of one of the blades, or else to a slipping of the instrument from misdirected traction. As to the first presumptive cause, direct perforation by one or the other blade, the lesion would appear to have been too extensive to be thus explained; for under such circumstances patients have presented a simple, almost clean-cut wound, situated, in the majority, high up in the cul-de-sac, and showing exactly where the perforation from the blade occurred. It is safe to

state that when much force is required to introduce one or the other blades of the forceps, something is radically wrong, providing the attempt to apply this instrument is correctly made. But occasionally a case is seen in which it is impossible to introduce the first blade except by means of brutal efforts. Such force should not be persisted in, and in the several cases coming under the observation of the writer he considers it in order and perfectly legitimate to reverse the introduction of the blades, applying the right blade first and then the left. These inversed manipulations (the application of the left blade after the right one) give no further trouble, and the forceps not only hold, but delivery is readily accomplished. The locking of the blades is easily performed by either applying the left blade underneath the right or else by applying it above and gently crossing the handles after both blades are in place. The probable cause of the laceration in the instance under consideration most likely was the slipping of the instrument from faulty axis traction. It is a very common experience, when the family physician undertakes to deliver such a case, to note that in the majority of such operations, no matter where the head is located, traction is almost invariably made too far forward. This is a very common error. In teaching post-graduates the use and application of the forceps, the writer has seldom met the man who does not make direct forward traction, even though the head be above the brim. This faulty manipulation always predisposes to slipping of the blades, and the operator may consider himself lucky if serious lesions do not result. I hold that traction can never be made too far backward, for if the head does not follow such traction, the direction of the blades may always be gradually modified so as to bring the traction a little further forward each time. If the attending physician is at a loss to know exactly in what direction to institute the traction, apply the blades, without chloroform, and let the woman have several pains, then note the direction which Nature causes the handles of the instrument to assume. This proves the proper axis of traction, and can be at once and safely followed. The ideal forceps operation to-day is performed with the typical axis traction instrument. The direction of correct traction is indicated by the handles of this almost intelligent instrument. But the objections to its use are cost, and, what is more important, in inexpert hands it is as dangerous as it is safe and strength-saving in those of the expert. Another frequent cause of slipping of the instrument is the presence of a large head or the grasping of an average-sized one by its longest diameter. When one pair of forceps slips it is folly to repeatedly attempt the application of different varieties of the

instrument, for when one forceps holds it is safe to assume that all will. It is only necessary to apply the blades to another diameter of the fetal skull, and when the forceps still continues to slip something is radically wrong, and other measures are certainly indicated.

THE THYROID-GLAND TREATMENT OF CRETINISM, WITH REPORT OF A CASE.¹

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CRETINISM, myxedema, and other diseases allied to abnormalities of the thyroid gland have received such carefully detailed attention since the results of the work of Gull, Schiff, Ord, Reverdin, Kocher, Bircher, and Horsley were made known, that the time seems fitting to draw absolute conclusions as to the physiologic function of the gland and to interpret the far-reaching physical effects caused by its disease or absence, and, at the same time, to indicate the range of the specific therapeutic application of thyroid treatment. The following report of a case of cretinism I trust may lend assistance in the interpretation of this curious disease:

H. G., female, aged fourteen years, was admitted to the Milwaukee County Hospital and came under my care during November, 1893.² She was the second youngest of ten children. The moral as well as the physical family history was extremely bad. One sister of the patient had died at the age of twenty-five years from pulmonary tuberculosis.

The child presented the usual picture of an extreme type of cretinism, there being almost entire absence of special functional development. The anterior fontanel was widely open, and there was curvature of the spine. The bones of the upper and lower extremities were enlarged and thickened at their epiphyseal ends. Knee-jerk, though much diminished, was present. The prick of a pin failed to elicit sensation of pain. Internal strabismus was pronounced, but the pupils reacted equally and normally to light. Attraction for color was the only indication that sight was present. The voice was harsh and guttural, though at times high-pitched. The presence of the sense of hearing could not be absolutely defined, and the same was true of that of smell. Taste was present, as indicated by the refusal to partake of certain foods. The power of speech was absent, and the patient was unable to sit or stand erect. Arm and leg movements were very limited in extent.

The bridge of the nose was flattened, the soft parts being broad and spreading. The palpebral fissures were slit-like, the chin receded, and the upper lip protruded. Measurements taken at this time were as follows: Glabella to occipital protuberance, 29 cm.; from center of one external auditory meatus, over the vortex, to the opposite one, 31.5 cm.;

¹ Read at a meeting of the Wisconsin State Medical Society.

² I am indebted to Miss Louise R. King, Superintendent of the Children's Hospital, for many important details of the clinical history.

greatest circumference of head, 50.7 cm.; circumference of neck, 27.5 cm.; of thorax at nipple line, 54 cm.; of abdomen through umbilicus, 52 cm.

The hair of the head was very thin, coarse in quality, and of a dirty yellow color. There was no hair on the pubes. The skin over the entire body was of a chalky-white color, very dry, and that covering the hands and feet was puffed and shining. The tongue appeared to be too large for the mouth, and was almost constantly visible. There was an uninterrupted dribbling of saliva. The roof of the mouth was deeply arched, and the twelve teeth present were discolored and worn down to the level of the gums. The patient's bowels moved once daily, the feces being formed and of a normal color. The kidneys acted freely, but the urine was passed involuntarily, and none could be obtained for examination.

During April, 1894, the administration of thyroid-gland extract was begun, and immediately a marked change in the condition of the patient was noticeable. Her intelligence improved, she became more observant, the anterior fontanel gradually began to close, the voice changed, and there was a decrease of the puffiness about the eyes and of the forehead. One day, six weeks later, I was summoned to the hospital by the resident physician, who reported that the child was dying. I found her temperature to be 104° F., pulse 160, and respirations from 40 to 50 per minute. As no symptoms indicative of any special complication were present, and as the thyroid extract had been given in 5-grain doses three times a day, I concluded she was suffering from thyroidism, and at once ordered the administration of the drug to be discontinued. A few days later she was removed from the hospital by her mother and taken home—two rooms in an indescribably filthy condition, which the woman occupied in common with an adult son and daughter and three negroes.

The child's temperature, pulse, and respiration continued abnormally high during about three weeks, and on July 13th I had her removed to the Children's Hospital. During the ten days subsequent to her admission her condition remained about the same, and then her temperature gradually subsided. The only treatment prescribed until August 14th was a warm bath every morning before breakfast, the administration of cod-liver oil thrice daily, and a full diet. Under this regimen she gained three pounds in weight, registering thirty pounds on the last-named date. At times her mental condition appeared to have improved. On August 14th, her temperature then being 98.2° F., and pulse 108, the former treatment was resumed, 2 grains of the thyroid extract divided into three doses being given daily. The dose was gradually increased, with remissions of the treatment during seven days every fourth week, until on October 22d she was taking 2½ grains of the extract three times a day. Her weight at this time varied between thirty and thirty-two pounds. From August 14th to October 15th her temperature varied between 98.2° and 100.4° F., and her pulse between 102 and 114. During this period she was very restless and cried a great deal, but her general

improvement was marked. Her voice was less shrill, memory and sense of association appeared to improve, her hair became of a finer quality, the puffiness of the skin disappeared, and the anterior fontanel almost closed. One of the most striking changes observed was in the shape of the forehead, for, whereas formerly it had terminated at a slightly obtuse angle at the junction of the skin and scalp, it now assumed a perfectly rounded form. This, of course, was due to the closure of the fontanel.

On October 4th the first signs of menstruation were noticed, good-sized clots being passed, and this continued during four days. As the patient still cried almost incessantly, I had her teeth extracted. They apparently belonged to the first dentition, although on account of their length (from 1 to 1.5 cm.) they resembled the second growth. Two weeks later, seven new teeth made their appearance almost simultaneously in the upper jaw and nine in the lower. During this time the patient was very nervous and fretful. From October 28th until November 19th the thyroid treatment was discontinued and cod-liver oil substituted. Her weight during this period increased each week, and on the last-mentioned date she weighed 31½ pounds. She menstruated again on November 8th, the flow continuing until the 14th. On the 19th she began taking 1 grain of the thyroid extract three times a day, and on the 22d the dose was increased to 1½ grains; but as the bowels moved too freely on the 24th its administration was stopped.

From August 14th to November 30th the patient had taken, in all, 431 grains of the drug. From October 22d to November 30th the improved physical condition was marked by entire closure of the anterior fontanel, an increased quantity and finer grade of hair, an absence of all puffiness of the skin, absence of salivary dribbling and protrusion of the tongue, the appearance of sixteen teeth, and of menstrual flow, development of stronger imitative faculties, and by attempts at forming distinct sounds. Mental association and accommodation remained in an infantile stage of development. Urine continued to be passed involuntarily, but after considerable difficulty an ounce of the fluid was secured and analyzed. It was neutral in reaction and indicated nothing worthy of note. A count of the blood-corpuscles at this time revealed 3,500,000 of the red cells and a large number of leucocytes to the millimeter.

On November 25th accurate measurements were again made, and resulted as follows: Glabella to occiput, 35.5 cm.; from the center of one auditory meatus to the other, 32 cm.; greatest circumference of head, 52.5 cm.; circumference of neck, 25 cm.; of thorax at nipple line, 53 cm.; of abdomen at level of umbilicus, 54 cm.; length of body, 84 cm. A comparative study of these figures and those obtained before treatment was begun indicates an increase in the measurements of the head, abdomen, and body-length, and a decrease in those of the neck and thorax.

During December, 1894, and up to August 1, 1895,

the following observations were made: Eight hundred and ninety-four grains of thyroid extract was taken, an average of less than four grains daily, and every fourth week its administration was interrupted for a period of seven days. A teaspoonful of cod-liver oil was given twice daily during all this time, and a plunge-bath, lasting ten seconds, in water at 70° F., each morning before breakfast. I had observed that the patient had made a distinct mental gain whenever the administration of the thyroid extract was pushed to its physiologic limit, and, therefore, during the months of May and July I increased the doses gradually until she was taking from 3½ to 4 grains three times a day. Six ounces of milk was given every two hours. This increase was maintained during twelve days in May and ten days in July. During these two months, and also during June, sys-

marked progressive improvement, the bones appearing firmer and the teeth large and fully developed.

The mental change during the first of these months was hardly perceptible, although the patient was placed in the same room with other children in order to stimulate her imitative faculties. During the latter part of the period, however, the improvement was marked, probably as a result of the medication and gymnastic treatment. She became more observant and at times indicated that hearing and association and projection were more acute, although this improvement was not progressive. More marked was the development of associated action, as, through observation of the other children she learned to grasp a chair and stand by it, and to sit up in bed. The arms and hands became more useful members, and while lying in bed she developed the habit of lifting

FIG. 1.



Cretinism. Child aged fourteen years. Before treatment was begun.

tematic extension of the entire body was made, lasting five minutes at first, and, finally, increasing the time to one hour, combined with manipulation of the joints. Her weight remained practically at thirty pounds, although it occasionally varied from half a pound to a pound each way. Her highest temperature at any time was 100° F., her pulse ranged between 74 and 112, and her respirations between 20 and 30. The blood count was the same as before. Her physical condition improved in every way. During December she had an attack of diarrhea, which lasted two days, but the appetite and digestive processes were good throughout the entire period. She menstruated in December, February, April, and May, the flow being scanty but continuing three days during the first two months named and two days during the latter. The osseous system showed a

one leg. The only abnormal nervous manifestation observed during the latter months was the sudden occurrence of paroxysms of hysteria during the day or night, in the latter case the child awakening from a sound sleep and laughing, crying, and thrashing about the bed. These attacks lasted from fifteen minutes to an hour, and occurred at irregular intervals, at times every third or fourth day, and again every day during three or four days. They continued during May, June, and July, and then all at once ceased. The administration or withholding of the thyroid extract had no effect upon them. On July 19, 1895, the patient had gained 4.5 cm. in height since the preceding November.

The third period of treatment dated from August 1, 1895, to January 22, 1896. During this time she was given 879 grains of thyroid extract, an average

of 5 grains per day. The administration of cod-liver oil morning and afternoon was continued, as was the daily bath. Massage and gymnastic exercises were not persisted in as she became too restless under the treatment. She was placed on the floor of the ward so that she might play with the other children, this being the only change in her environment. Her weight continued to vary, on August 5th being 29 pounds, and on December 30th 37½ pounds. Her pulse ranged between 80 and 120, and temperature between 97° and 104.2° F. The blood count was the same as before.

Nothing worthy of note was observed during this period except a very slow improvement mentally and a much more marked one physically. During the evening of January 20th, her temperature suddenly rose to 104° F., her pulse to 160, and respiration

pubic symphysis demonstrated the presence of underlying adipose tissue of the thickness of 1 cm. Upon removing the sternum the thymus gland was found. It was attached to the subclavian artery on the right side, to the tissues surrounding the aorta on the left side, and in the median line to the deep fascia covering the trachea. It measured 10.5 cm. in length and 9.5 cm. in width, the left lobe being 1.8 cm. thick, the right lobe 2.3 cm., and the superior and inferior lobe each .5 cm. It weighed 64 grains. Small glands studded the entire pleura. The organ covered the anterior pleura from the suprasternal notch almost to the ensiform cartilage, the smaller glands being of the average size of a dime.

Nothing abnormal was found in the pericardial sac or heart. There were a few hard nodules, varying in size from a millet-seed to a kernel of wheat, in the

FIG. 2.



Cretinism. After eight-months' treatment.

became so short and quick that it was only with difficulty they could be counted. At this time she was taking 6 grains of thyroid extract daily. Medication was immediately stopped, but her condition remained the same, with one remission of temperature and pulse-rate, during two days, when, on January 22d, at one o'clock in the afternoon, she died.

A *post-mortem* examination was made four hours later, of which the following is a summary: Body fairly well nourished, presenting nothing of special interest externally. Weight, 35 pounds. Height, 105 cm. Cadaveric discoloration of the neck and back. A careful dissection around the trachea failed to reveal the thyroid gland. On the left side of the cricoid cartilage was found a pear-shaped gland, 2.5 cm. in length, 1.2 cm. thick, and 2 cm. wide, which, on section, presented the appearance of an enlarged lymph-gland. An incision from the chin to the

apices and bases of the lungs; otherwise these organs were normal. The spleen measured 8 cm. in length, 4.5 cm. in width, and 2 cm. in thickness, and was perfectly normal in color and structure. The pancreas, stomach, intestines, and liver were normal, the latter organ measuring 18 cm. transversely, 13 cm. anteroposteriorly, and 5 cm. from above downward. The suprarenal capsules showed no abnormalities. The left kidney was normal. It measured 9 cm. in length, 5 cm. in width, and 4 cm. in thickness. It was soft, and the capsule was non-adherent. The right kidney was found lying in the space made by the curvature of the spine, which began at the seventh dorsal vertebra and carried the entire structure to the right (see Fig. 3) so that the distance between the twelfth dorsal vertebra and tenth rib on the right side was 2.5 cm., that between the end of the eleventh rib and middle of the crest of the ilium

being 7 cm. on the right side and 3 cm. on the left. The kidney was in contact with the crest of the ilium, and conformed to the shape of the cavity, being 10 cm. long, 5 cm. wide, and 4.5 cm. thick.

The bladder presented an interesting pathologic condition. Its walls were much thickened, the anterior wall being 1 cm. in thickness and the posterior .5 cm. The capacity of the cavity was one-half ounce. Embedded in the wall above the ureteral openings was a calculus about the size of a dime. The uterus was of infantile size. The ovaries were small, but contained normal ovarian tissue, and in one of them was found an ovum.

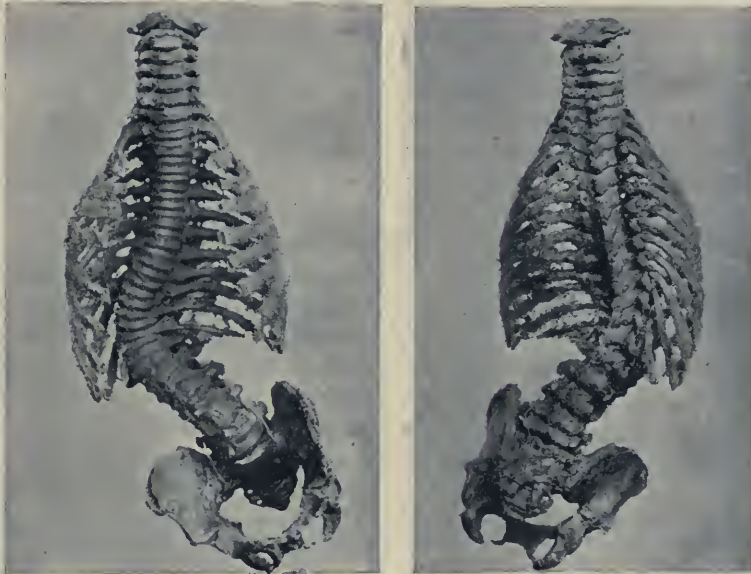
Upon opening the calvarium the dura was found to be thickened and firmly adherent throughout its entire extent to the bone. Extending from 1 to 1.5 cm. on each side of the longitudinal sinus was a deep-

sules, as well as of other tissues throughout the body, merely showed an excess of fibroid growth in all.

A study of this case strikingly illustrates the place occupied by the thyroid gland in the physiology of man, as well as the therapeutic application and limitation of its extract. Structurally, there was present in this patient, an increased thickness of the skin, softening and inhibited growth of the bones, with a compensatory enlargement after coordination was produced, and dwarfism.

As a result of the knowledge obtained by the study of the cases reported, it is evident that structural changes and their cause may be classified under the following headings:

FIG. 3.



Showing curvature of spine in cretin aged fourteen years (soft tissues eaten away by mice).

red discoloration of the membrane from which bloody fluid exuded. Nothing of interest was observed in connection with the pia mater. The gray and white matter of the brain was of normal consistence. About two ounces of bloody fluid was found in the lateral and fourth ventricles. The convolutions were flat and the sulci very shallow. The weight of the brain was 1456 grains. As I desired to preserve it for future microscopic examination, sections were not made. The pituitary body was .8 cm. wide, .7 cm. long, and .3 cm. thick, and weighed 2 grains.

An examination of the marrow of all the bones revealed nothing but the red variety. A microscopic examination of the pear-shaped gland found in the thyroid location revealed nothing but hypertrophied and hyperplastic lymph-cells. A like study of the pituitary body, thymus gland, and suprarenal cap-

1. Congenital absence, diminution in size, or acquired atrophy of the thyroid gland results in myxematous thickening of the skin, persistence and enlargement of the thymus gland, hypertrophy and hyperplasia of the lymph-glands, changed structure and retarded development of the entire osseous system, and dwarfism. Functionally, there is mental apathy and lack of development, retarded and deficient motor- and sensory-nerve mechanism, and manifold incoordinations and muscular retrogression.

2. Acute disease of the thyroid gland results in softening and retarded development of the osseous system, and anemia, producing a condition which retards absorption and excretion in the stomach and intestines, bronchitis, and abnormal nervous manifestations.

3. Chronic disease of the thyroid predisposes to malignant, adenoid, and cystic growths, and microbic diseases.

4. Hypertrophy and hyperplastic excess of thyroid structure, as shown by Mobius and Greenfield, and by Horsley, results in exophthalmic goiter or Graves' disease.

To recapitulate: Anatomic, physiologic, therapeutic, and pathologic evidence predominates in indicating that the thyroid gland directly controls the coordinate growth and development of the entire organism; that this evidence suggests that the diseases of the gland are limited by the absence, diminution, or excess of special gland structure, and by changes in the gland secretions and excretions, resulting in the production of cretinism, rickets, and exophthalmic goiter; that the skin and thymus gland attempt above all others to compensate for the absence of the thyroid function, and that structural and functional diseases of the bones are directly caused by disease of the gland; and that therapeutic application of the extract of the gland should be confined to conditions in which there is absence, diminution in size, or disease of the thyroid structure, as indicated by functional changes in the skin, sensory or motor nervous systems, structural changes in bones, and dwarfism.

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WHAT CONDITIONS INFLUENCE THE COURSE OF INFANTILE SYPHILIS?

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In order to take a comprehensive survey of the field covered by the above inquiry it is necessary to determine definitely what is to be understood by "Infantile Syphilis." The words, strictly interpreted, relate only to syphilis in infants. Restricting the discussion, however, to such a narrow division of the subject would mean an exclusion of some of the most important and interesting of the ascertained facts. It is desirable instead, to include under this general term (1) the phenomena of syphilis as displayed in intra-uterine life, syphilis of the products of conception, of the ovum, and of the fetus, (2) extra-uterine or hereditary syphilis in the infant, and, (3) acquired infantile syphilis, the disease as it affects otherwise healthy infants who suffer from what has been termed contact-syphilis.

The course of the *lues venerea* in the unborn products of conception is one which is often wholly uninfluenced not only by treatment but by external interrupting circumstances. In the acquired forms of the disease this is the exception rather than the rule; for in syphilis of the second generation the social condition of the infected progenitors is a factor of importance. Infantile syphilis is decidedly more common in hospital and dispensary patients, among the poor, the degraded, and the filthy than among the better classes who suffer equally with the others from the acquired disease. The educated, the wealthy, and the comfortably housed contract syphilis, it is true, but *after infection* secure appropriate treatment, and then, for the most part, refuse to marry or to procreate until there is a reasonable prospect of the birth of healthy children. If infection of the wife does occur and pregnancy follows, treatment is promptly instituted. In the case of the poor, the destitute, the uncleanly, and the ignorant, the mother, without conspicuous stigmata of the disease, concludes her pregnancy prematurely or at term, often without any interference with the complete evolution of the disease both in herself and in her offspring. It is well to bear in mind the errors most commonly committed in the effort to properly interpret the signs of this intra-uterine syphilis of uninterrupted course. Not every abortion, not every miscarriage of a pallid-faced mother whose husband gives a history of premarital infection, is necessarily syphilitic. Not every still-born child, and even, not every macerated fetus is dead in consequence of *lues venerea*.

There is no question to-day among the informed as to the fatal termination, as regards the fetus, in a large percentage or all pregnancies when the product of conception has been infected. This may be set down as one of the few irrefutable facts of syphilis. Waiving, for the moment, consideration of the question whether this mortality is conditioned upon an infection of either paternal or maternal origin, whether the placenta be or be not involved, whether the maternal infection, if such there has been, was ante- or post-conceptional, with a view to the determination of the present question, it should be asked, what percentage of pregnancies is concluded at term with the birth of a living child, and what percentage is prematurely terminated by abortion or miscarriage? The obstacles to a precise collation of the required data are simply insuperable. The best that may be made is an approximate estimate based upon the statistics of a group of careful observers such as Kassowitz, Lancereaux, Neumann, Coutts, Jullien, and Warner. These authors, it must be admitted for the most part, give figures which it is

difficult to compare by reason of the fact that they draw no hard and fast line at the date of the completion of pregnancy, but class together in the fatal issues of each, all instances of abortion, miscarriage, still-birth, and of children dead at or soon after birth, the limit last named being by one of these authors extended to six months. In 1700 syphilitic pregnancies, however, which it is possible to employ in studying the course of syphilis as it affects the fetus, the total number of abortions, miscarriages, and still-births amounts to 579. It follows that about one-third of all pregnancies of syphilitic women terminate by the death of the fetus before or at the completion of pregnancy. These are about the figures reached by a study of the statistics of Kassowitz. When they are added to those representing the mortality of the children born at term and surviving for variable periods, a clearer view may be obtained of the evolution of the disease in the second generation.

It has been the destiny of syphilis to be confounded with more maladies than any other single disease. Instances of the acquired form of *lues venerea* are daily assumed to belong to another category. Daily, also, are non-syphilitic affections diagnosed and treated on the assumption that they are of specific origin. It is as common to discover these errors in the inherited as in the acquired forms of the disease, and yet the possibility is often overlooked in accepting reports of cases and in the study of the literature of the subject. In view of these facts one is almost tempted to advance toward the extreme position lately taken by Parker who, certainly with proper appreciation of the dangerous errors committed in this connection, distinguishes between "inherited syphilis" and diseases "inherited from syphilis," demanding, in order to establish the fact of the former, that proof be given of the contagious character of the disease exhibited by the suspected infant. Not every child with Hutchinsonian teeth, with cranial bosses, with a natiiform skull, or suffering from a rebellious affection, is the victim of inherited syphilis. Even the painstaking labors of a Parrot have not sufficed to obliterate the distinction between syphilis and rickets. The puny infant with coryza and eruptive symptoms about the mouth and anus may not be a source of infection for others. It would seem trivial to refer to such commonplace occurrences were there not a constant recurrence in the medical press of the blunders originating in the misinterpretation of these facts. Within the last six months, for example, one of our most extensively circulated medical journals of a high rank published a communication from an officer of an important State institution for the care of the insane, in which

it was held that four patients affected with general paralysis (*délire des grandeurs*) suffered from the disease as a consequence of the inheritance of syphilis; because in each instance there was no history of the acquired disease, and yet Hutchinsonian teeth were exhibited, the article being accompanied by illustrations of the teeth in question. Avoiding the possibilities of errors of this and a similar kind, a study of the facts of extra-uterine syphilis of the second generation, when collated from trustworthy sources, throws further light upon the natural evolution of the malady.

As the result of the 1700 pregnancies to which reference has been made, there were born 1121 living children of whom 956 died within the first twelve months. Of the remaining 165 children who chanced to survive a year nothing is known. It is, however, certain that they had not yet reached a stage of development when they could be regarded as exempt from the dangers which had destroyed so many of the others. The proportion of those succumbing later is unknown. The ascertained figures, then, representing the mortality affecting these 1700 products of conception both during and after pregnancy, are 1535, or nearly 95 per cent. of the total number. The estimates made by other competent observers vary between sixty and ninety per cent. of fatal issues when the data of intra-uterine life and those of infancy are combined. For the purpose of comparison I have collated the figures embodied in the histories of twenty-five syphilitic mothers resident in Chicago, consecutively recorded, as a result of whose forty-one pregnancies there were thirty-one abortions, miscarriages, and children dead at birth or within one year. One of these children unquestionably escaped infection. Of the fate of the nine survivors at the end of the year nothing is known. This points to a mortality of about eighty per cent. of all the products of conception. If these figures be accepted as trustworthy, it follows that the issue of syphilis as it is developed in the products of conception of diseased parents is comparable only with the gravest of the plagues and pestilences to which the human family is subject. Smallpox in infants is estimated to be followed by a mortality as high as ninety per cent. but great allowance should be made for the varying severity of different epidemics. Many of the formidable incursions of yellow fever and cholera spare a larger proportion of victims than survive the scourge which is the subject of this discussion. In point of fact one is at a loss to discover mortality statistics with which these may be justly compared, if recourse be not had to the progress of the plague in Europe during the Middle Ages.

Most of the text-books on syphilis are written for

the benefit of the practitioner and of the student who purposes one day to be a practical physician. As a consequence the chapters on hereditary syphilis contain many pages which are properly enough devoted to a description of the clinical and other symptoms of the disease as they occur in the meagre number of survivors of the malady, while but a few paragraphs are devoted to the enormous mass of pathologic facts which are to be gathered from a study of abortions and miscarriages in the syphilitic. Of the blighted germs and the macerated fetuses only a few are preserved among the morbid specimens of the medical museum, the great mass of which are swept with the sewage into the limbo of the unseen, to descend by retrogressive metamorphosis to the primary elements from which they were evolved. Having in view the number of clinical facts to which the figures cited above significantly point, one is in position to formulate an approximate answer to the question propounded, *viz.*, "What Conditions Influence the Course of Infantile Syphilis?"

The Virus.—Twenty years ago the word "virus" would probably have been defined as a secretion containing an animal poison; to-day the word is set down as equivalent to a pathogenic micro-organism; to-morrow it will be necessary to add the words "or its toxin." In the case of syphilis the germ and the toxin, if such there be, are as yet undemonstrated as efficient factors in the production of the disease. But no better working hypothesis is at hand than the general assumption that syphilis, with regard to its ultimate cause, is to be aligned with the other infectious granulomata, and is dependent upon an undiscovered bacterium, which, either by virtue of its presence or by the potency of its toxin, is capable of transmitting the disease. Does this virus of syphilis, recognized as effective in the second generation of its victims, differ in its energy according as it acknowledges a paternal or maternal origin in the first generation? Looking to the facts of inheritance in general, we can discover no preponderance of one sex over the other in the power to transmit disease. Inherited tuberculosis descends with equal destructiveness from father or mother. Syphilis offers no facts controverting such a position. That the energy of the virus is to a degree related to the activity of the disease in the progenitors is generally accepted. It is conceded that with both parents recently infected the chances of grave syphilis in the offspring are increased, that with one parent exhibiting the disease in marked activity, the dangers are greater than when the malady in the parent has waned, that the virus furnished after the production of a series of abortions and miscarriages is likely to be attenuated to the point of lessening

its activity and its capability of transmission, and lastly, that in almost every syphilis of the parents there are to be recognized periods, often alternating, of aggravation and of amelioration, transmissibility in these pauses of the disease being either greatly weakened or wholly lost. Even after due consideration of the appalling mortality which furnishes one of the chief symptoms in syphilis of the second generation, it is not to be forgotten that cases of mild inherited syphilis do occur, and that recovery, complete and satisfactory, follows in a small percentage of the patients.

The Individual.—Turning now from consideration of the virus, it is apparent at a glance that the individual product of conception in syphilis is practically deprived of the resources provided, in the great majority of all other patients, for resistance to the onset of the disease. The individual attacked with acquired syphilis is often assured of a sound ancestry, and of uninterrupted opportunity for nutrition and development prior to the date of his or her infection. In hereditary syphilis, on the contrary, the individual is poisoned *ab ovo* by the introduction of a pathogenic germ, either into the sperm-cell or ovule, or both, and at every point of subsequent evolution suffers from impaired nutrition and from a retardation of growth through the influence of a morbid process which is likely to invade every organ. Shall we then hasten to infer that in syphilis of the second generation the virus is wholly efficient and the individual absolutely helpless in influencing the course of the disease? It is, indeed, rare in the purview of nature that man is abandoned as an utterly unaided creature in the face of the encroachments of disease. Even an aortic aneurism may undergo calcification! In the case of infantile syphilis, when the odds are heavily against the survival of the remnant, an individual is provided with resistance by the force of whose interference the course of the disease is influenced to a remarkable degree. This is a fact the significance of which is apt to be overlooked, and the instructiveness of the result is of the highest importance in throwing light upon the two factors named in the subject of this discussion. The individual in this case is the mother who can offer to her child a breast filled with milk, a being at one time undivided from her child, a being really taking position as a separate individual only after the child is weaned. It is a well known fact that in some of the vertebrata the suckling at the mammary gland is often enclosed in a protective pouch where it exists in a fetal state for some time after extra-uterine existence has begun. The influence upon the mortality statistics of infantile syphilis of the nursing mother operating under the disad-

vantages of a cachexia which is shared by both parent and offspring, cannot be challenged. Several writers, such as Henoch,¹ claim that all infants affected with hereditary syphilis die if they are not suckled at the breast. Widerhofer² puts the percentage of such deaths in children artificially reared as high as ninety-nine per cent. Other observers conclude that between ten and twenty per cent. of infants affected with hereditary syphilis are either completely snatched from peril or enjoy prolongation of life in consequence of being nourished at the breast of the mother. On a field then, more thickly covered with a proportion of the dead and dying than any battle-ground of modern times, we find women stricken with the same dart which has destroyed the multitude, who succeed in snatching from destruction a calculable number of infected infants by simply providing them with breast-milk. This notable result is attained solely by virtue of improving the nutrition of the infant. We are therefore justified in somewhat qualifying the response to the categorical question which forms the subject of this debate. The virus is *not* solely efficient in influencing the course of infantile syphilis. The individual, in this case represented by the mother who is the food-supply of the helpless being, is capable of diminishing the mortality of the disease to the extent of saving between ten and twenty out of every hundred of infected children. If the mere fact of an improved nutrition can work this effect in the victim of hereditary syphilis, I will leave it to my distinguished colleague to estimate the value of the same factor in acquired disease. To ignore it would be as short sighted as it would be fatal to safe conclusions. The subject of late inherited syphilis, as it relates largely to the adult, is relegated to the gentleman to whom has been assigned the duty of reporting on that branch of the subject.*

With respect to acquired infantile syphilis, it is gratifying to note that the disorder is far less common than is usually believed. Fournier has a record of but forty-two patients of this class coming under his observation, though he adds that he believes as many more have been seen by him in regard to which no notes were taken. I have a record of less than a score of cases in which there was no doubt respecting diagnosis. Five resulted from arm-to-arm vaccination; two from soiled instruments; two others were produced by the kisses of women whose lips were the seat of mucous patches; one infant was infected from the chancre of a male parent when the two occupied a bed in common; the other

eight occurred in families in which there were infected adults, but in which the mode of transmission is unknown. With two exceptions (one of the vaccination cases, another described more fully in this paper), all these were dispensary patients coming from the very lowest grade of society.

The most remarkable contrast is afforded by the statistics of recovery in this class of young subjects as compared with those suffering from inherited syphilis. Fournier states that all his cases resulted in recovery save in one instance, that of a child dying of cachectic pneumonia. With reference to the issue in the parents who have come under my personal observation, it can merely be set down that no one of the children is recorded to have died of the disease, though, as is well-known, American dispensary patients are remarkable for the ease with which they escape from observation and elude the compiler of statistics.

It is so rare that an infant acquires syphilis at the moment of birth, or almost immediately thereafter, that a study of even one such carefully observed case, when compared with that of a child affected with hereditary syphilis, possesses some interest:

A well-nourished infant, aged two and one-half months, of parents who were both wealthy and of good social position, was brought to me by the physician who had delivered the mother, himself a professor of obstetrics in one of our large medical schools. The child had a well-developed but lapsing initial sclerosis over the tip of the right ear (at the site of a wound inflicted by the obstetric forceps with which it had been brought into the world). It exhibited, also, accompanying adenopathy, and a brilliant macular exanthem. Mucous patches existed in the mouth, and the child had promptly infected its mother who exhibited a chancre of the nipple, with axillary adenopathy. The eruptive symptoms in the mother made their appearance in due time, in fact, after those of the child had quite disappeared. The father, who was absent from home months before and after the birth of the child, was carefully examined on his return, and was found to be even in unusually sound health, and denied prior venereal disease of every kind. The medical attendant was one of those brilliant and busy men to be found in all large cities, doing a great deal of work under an enormous pressure, and eventually dying under the strain of it. When privately taxed with the possibility of having used unclean instruments in this case, he could only say that he was in the habit of taking proper precautions. The nurse who had dressed the child after birth was examined and found free from evidences of disease.

The mother of this infant had been a delicate woman before marriage, and could give her child only deficient alimentation by the breast. It was necessary to resort in part to artificial feeding. A photograph of this child stripped naked, after it had

¹ *Vorlesung über Kinderhautkrankheiten*, S. 105, 1889.

² *Klin. Vorlesg. Wien. Allg. Med. Zeitung*, 1886.

* "What Conditions Influence the Course of Syphilis?" THE MEDICAL NEWS, October 30, 1897.

attained two years of age, indicated that the result of its prolonged treatment had been wholly satisfactory. It was plump and well nourished. The mother had a long and serious convalescence after repeated attacks of iritis, with at one time the formation of a gumma in the breast.

With a view, then, to answering the question, what conditions influence the course of acquired infantile syphilis, the virus or the individual, experience would point to the conclusion that in infants the individual, as against the virus, exerts that degree of higher influence which may be recognized in the case of acquired syphilis of adults. Many writers who touch upon this theme have introduced, in the presentation of these cases, the influence of treatment as a modifying cause. With a view to gaining some insight into the truth of the matter, we may be permitted to compliment the Council in the elimination of the element of treatment from the terms of the present discussion. Here it is a question simply of virus *versus* individual, with the weight of evidence now on one side and now on the other, according to the conditions presented in different cases. These conditions are wholly different in the case of chemic intoxication, and in the instance of poisoning by living micro-organisms. In the former the pathologic results are proportioned with approximate exactness to the dosage of the chemic poison. In the latter, the multiplication of fission-fungi within the animal organism may proceed with the greatest activity after a minimum quantity of the virus has once been introduced into the economy; and the soil, together with favorable or inhospitable environment, has much to do with the question of multiplication and toxin production of the implanted germs.

If we turn to the facts of general pathology we find the answer which awaits us there the same as in syphilis—a malady which Andrel once declared would furnish a key to the study of all morbid phenomena in the human body. The smallest dosage of the variolous poison, even in the attenuated form of mild varioloid, is capable of transmitting to the unprotected the severest confluent form of the disease. In certain epidemics of hemorrhagic variola even the protected at times may suffer. By the attenuation of a virus many of the brilliant advances of modern therapeutics have been attained. Diphtheria, hydrophobia, and tetanus bear ample witness of this fact. But he is indeed blind who cannot see in the subject of tuberculosis, of septicemia, of yellow fever, and of cholera the wall which is ever and again built as a bulwark to the encroachments of disease, by the sound constitution, the satisfactory habits, and the hygienic environment of the selected individual.

CLINICAL LECTURE.

A CASE OF SUSPECTED CARDIAC ANEURISM; FOUR CASES OF CHRONIC PAREN- CHYMATOUS NEPHRITIS; THE USE OF INTRAVENOUS SALINE INJECTIONS IN UREMIA.¹

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THE first patient shown to-day is of more than usual interest, because, if the diagnosis is correct, he is suffering from a very rare cardiac affection, a condition which is still more rarely correctly diagnosticated during life. He is about thirty-five years of age, and while a very young child suffered from an attack of acute infantile palsy, which, as you see, has seriously interfered with the proper use of his right leg. At the age of nine years he had a severe attack of acute articular rheumatism, which confined him to bed for a number of weeks, and at fourteen he was again incapacitated by an "attack of dropsy," as he expresses it, which his physician told him was due to the condition of his heart. He remained fairly well until 1892, when he began to suffer somewhat from dyspnea, and from 1894 to the present time he has suffered from a constantly increasing dyspnea, which has been so severe as to prevent him from doing any form of labor or taking any but the gentlest exercise. The dyspnea is more or less constant, is greatly aggravated by exercise, and he tells me that the disturbance of his heart following slight exertion has within the last week twice resulted in a sudden attack of syncope. His face, as you notice, is unusually pale but not at all cyanotic; indeed, he presents rather the appearance of a patient with chronic parenchymatous nephritis. When we examine his urine, we find that it is heavily loaded with albumin, that it contains a few epithelial casts and some uric-acid crystals. An examination of his heart shows a very extraordinary condition: There is considerable bulging over the whole precordial region, and palpation reveals a heaving impulse, which is most marked two inches below the nipple and half way between the anterior axillary and the mammillary line. The impulse in this area is not only forcible, but it is distinctly expansile, giving one the peculiar distensile sensation so frequently felt in cases of aneurism of large blood-vessels—for instance, aneurism of the thoracic aorta, of the abdominal aorta, or of the popliteal artery. This peculiar expansile pulsation is one of the most important points in the diagnosis of this case. An examination of the heart by auscultation reveals the fact that in the particular spot where this expansile pulsation is felt there is a soft bruit or murmur, a bruit which cannot be heard over other portions of the heart. The ordinary heart-sounds are so muffled as to be practically indistinguishable, and we simply have a sensation both on pal-

¹ A clinical lecture delivered at the Jefferson Medical College Hospital.

pation and auscultation of a moving body in the place in which the heart ordinarily produces its characteristic valvular sounds.

On inspection you can actually see the powerful apex beat and its somewhat expansile character. A careful study of this case leads me, for the following reasons, to believe that it is one of cardiac aneurism: (1) The markedly expansile character of the apex beat. (2) The fact that this apex beat is far below the normal point and much further to the left than it ought to be; in other words, it is in a position where an aneurismal dilatation of the ventricular wall at the apex would naturally project itself. The attacks of dyspnea from which the patient suffers on exertion, while they often occur in cases of valvular disease of the heart, are usually associated with considerable dilatation of the organ, a condition which does not exist in this case. We find that the area of cardiac dulness is not materially increased to the right nor to the left, except in the direction named. Finally, the murmur probably does not depend upon a valvular lesion, as it is not constant; it varies in intensity before and after exercise, and in all probability disappears when the patient rests and takes stimulants. This latter fact is made clear when it is understood that he recently had his life insured for \$5000, successfully passing the medical examination by taking full doses of strychnia beforehand and thereby rendering the action of his heart not only regular, but devoid of murmur. I have carefully gone over the other lesions which might possibly produce symptoms similar to those from which he suffers, and am unable to discover any signs pointing to a condition other than that which I have named.

The treatment should be almost identical with that which we usually give a patient with aneurism. He should, if possible, be placed upon his back, should receive moderately full doses of iodid of potassium, and a sufficient quantity of aconite to act as a marked sedative upon his heart without at the same time depressing it too greatly. His diet should be regulated, and, should he for any reason refuse to stay in the house, we will earnestly urge him to avoid anything like a sudden strain, as running, or the ingestion of powerful stimulants such as alcohol, a drug which he is accustomed to use in excess.

I neglected to say that one reason for believing that the patient is suffering from cardiac aneurism is the character of the impulse which is present, the force of the heart, as it were, seeming to be expended upon itself; as a result the peripheral circulation is poorly maintained. On first seeing this patient you might be tempted, because of the feeble circulation in the peripheral arteries, to give him digitalis, but in my belief this would be improper therapeutics; since it would raise arterial pressure, thereby increasing the pressure of the blood inside the ventricle, and further, digitalis, would stimulate the remaining healthy fibers of the left ventricle to such an extent that the aneurismal swelling would be markedly increased in size. (At this point the patient interrupted the lecturer by stating that digitalis had often been given to him and was "poison" to him; that its use always gave him precordial distress and marked dyspnea, and that alcohol taken in full doses

had a somewhat similar effect.) For these reasons, then, if any cardiac stimulant is to be administered, strophanthus would be the best, because it would not raise the arterial pressure. Indeed, he tells me that nitroglycerin has also done him great good at times, particularly when he has had a severe attack of cardiac disturbance. The relief afforded by this drug under these circumstances is probably due to the fact that the nitroglycerin, by relaxing arterial tension, diminishes the dilatation of the aneurismal sac. I shall carefully watch his case and report to you any interesting details which may develop.

I now bring before you four patients, all of them in different stages of chronic parenchymatous nephritis. Two of the patients, as you see, are afoot, one of them is fairly stout but exceedingly pale and waxy-looking. As you notice, he has considerable dyspnea, but this is much less marked than it was when first he walked into the hospital, as he now has had several minutes' rest. An examination of his heart reveals a prolonged systolic murmur which is probably due to mitral regurgitation, although the action of the heart is so irregular and its sounds so indistinct that an exact diagnosis of the character of the murmur is difficult.

The second patient you will notice is evidently a man who has been much exposed to weather and to the excessive use of alcohol. He presented himself at the dispensary two days ago with urgent dyspnea, and with slight twitching of the muscles in various portions of his body. An examination of the heart failed to reveal any lesion sufficiently severe to explain his respiratory symptoms, but an examination of the urine showed a large amount of albumin and it was also found to contain epithelial and granular casts. An examination of the first patient's urine also shows the presence of an enormous amount of albumin.

Now these two patients are brought before you to emphasize one important clinical point, namely, that in the presence of a history of dyspnea of recent onset you should always examine the urine in order to discover whether or not the respiratory difficulty depends upon uremic poisoning. I wish to emphasize this fact because such an examination is often neglected and the careless and frequently incorrect diagnosis of primary cardiac or pulmonary dyspnea is made. Then, again, if you are not cautious, you may be misled into believing that frequent attacks of shortness of breath, particularly when nocturnal, are due to asthma, when in reality they are uremic; and the safest rule for you to follow is to examine the urine in every case of dyspnea, even though there seems to be sufficient cardiac and pulmonary difficulty to account for the symptoms. Thus, an examination of this man's chest, posteriorly at the bases of the lungs, may show impaired resonance and numerous râles, and you will be inclined to think that the patient is suffering from ordinary pulmonary congestion or catarrhal pneumonia when in reality there is present an edema of the lung due to a renal lesion. The marked dyspnea in both of these patients is evidently uremic in origin. The fact that one of them has already had diffuse muscular twitching indicates the onset of a uremic storm. The scanty amount of urine

which they have been passing and the feeble condition of the circulation in each case make it necessary that we should at once do something for their relief. They are too feeble to receive pilocarpin, too feeble to be bled, too feeble to be purged, and, on the other hand, their circulations are not so feeble as to require stimulation. What then shall we do? By far the best thing would be to place them in a hot pack, preceding which they should be given a bath and be washed with Johnson's ethereal antiseptic soap. This will remove from the skin all dirt and dead epithelium, and will open the pores so that the use of a hot pack immediately after the bath will result in the free outpouring of the impurities in the blood through the sweat-glands. During the time the patients are in the hot pack, if there is any delay in the appearance of the sweat, each should receive a glass of ice-water, as this frequently causes the sweat to appear at once, probably by contracting the central blood-vessels and driving the blood to the periphery. Should there be any tendency to cardiac feebleness we will administer a dram of gin every two or three hours; for this alcoholic preparation will at once stimulate the circulation and the diseased kidneys to increased activity, and because, in one of the patients, a deprivation of all alcoholic stimulation might precipitate an attack of delirium tremens.

The other two patients which are shown have been exhibited before. One of these men, when he entered the hospital a week ago, was so uremic as to drop off into unconsciousness whenever he was left to himself a minute or two. He was dyspneic, his pulse was exceedingly feeble, he was suffering from anasarca, and his lips and facial muscles were twitching from the uremic poisoning. At that time the anterior abdominal wall could be easily pitted on pressure. In his case, too, it was evident that bleeding and purging or a pilocarpin-sweat were all contraindicated by an exceedingly feeble condition, and I therefore decided to at once resort to the intravenous injection of a normal saline solution. I opened a vein on the anterior aspect of his forearm, inserted a small glass cannula which had a shoulder at its tip so that I could readily tie it in a blood-vessel, filled the cannula with salt solution in order to exclude air, connected it with the tube from the irrigating apparatus containing normal saline solution, and allowed a quart of the latter to flow very slowly into the vein.

As a result of this treatment the patient, who, in the previous sixteen hours had not passed any urine, passed within the next few hours no less than thirteen ounces, and perspired quite freely. As now, six days later, he sits before you in a rolling-chair, you will notice that he is pale to excess, and has the characteristic appearance of a patient with chronic parenchymatous nephritis, but he will tell you, as he has told me, that he is now free from headache for the first time in several months, that he feels very much better in every way, and that his dyspnea has disappeared. He has developed an inordinate hunger, indeed, so great that we have been forced to allow him a larger quantity of food than is ordinarily advisable in these cases. He is also receiving a dram of gin every two hours, and you may see from the chart that, since the gin has

been administered and the intravenous injection used, he has passed from twenty-eight to thirty-two ounces of urine in each twenty-four hours, although, as I have said, previous to his admission to the hospital, he was not passing more than five or six ounces in that period.

The other patient has been before you on three previous occasions. Twice he has been tapped before the class for ascites occurring in connection with a general anasarca; for the reason that the pressure upon his diaphragm was such as to seriously interfere with comfort. The fluid is once more returning, but you will notice that his face and hands are not at all edematous, and that his feet are far less so than when he came before you on previous occasions. — Further, he has been able, during the past week, to sit up a number of hours each day instead of being constantly confined to his bed. His appetite is fairly good and he passes urine freely. His treatment has consisted of the administration of 5 drops of the tincture of strophanthus three times daily, with 2 drops of the tincture of cantharides every eight hours. He has now received this treatment a month, and in addition small doses of Basham's mixture have been occasionally administered. He is very much better, although it goes without saying that the grave renal lesion precludes a favorable prognosis. Four or five days ago he was seized with a severe cough, and his temperature rose to 103° F. I feared during the next twenty-four hours that he was being attacked by pneumonia, but the lungs cleared, the cough has largely ceased, and I am in hopes, inasmuch as he is so much better, that the pulmonary condition was a mild attack of influenza or else one of those cases of transitory pulmonary congestion sometimes observed in patients with nephritis.

CLINICAL MEMORANDA.

CHANCRE OF THE LIP PROBABLY ACQUIRED THROUGH THE USE OF A "ROUGE STICK".¹

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ON December 18, 1896, I was called to see an unmarried girl, twenty years of age, who was suffering from a sore on the left side of the vermilion border of the lower lip, which she had first noticed about one week before. The lesion was covered by a brown, flat, depressed scab; but a raw surface extended down a short distance on the inner side of the lip, and there abruptly ended. The right submaxillary lymphatic nodule was very much swollen, hard, and somewhat painful. This was the only subcutaneous node which was demonstrable, and, except the lesion on the lip, there were no eruptions of the skin, or in the mouth, and the hair did not show a tendency to fall out.

The appearance of the sore, as well as the marked enlargement of a neighboring lymphatic nodule instantly raised the suspicion that it was a chancre. The closest questioning could only elicit that she had had a "cold-

¹ Read at a meeting of the California Academy of Medicine, September 18, 1897.

sore," which a druggist had touched with a stick of silver-nitrate. This cauterization had, however, taken place only about a week before I saw her, so that it was clearly not at that time that the infection had occurred.

The gravity of the question involved was explained to the patient, as was also the necessity of making an accurate diagnosis even at the expense of great personal discomfort. A positive diagnosis was not made until January 30, 1897, forty-three days after she first came under observation. At that time the sore was very large and painful, and projected out from the lower lip in the characteristic dish-form, with rolled edges and with a great deal of firm induration in the surrounding tissues. The enlarged lymphatic node under the right side of the lower jaw had decreased in size, but the anterior and posterior cervical lymphatic nodules on both sides were now demonstrable, and there was a well-marked roseolar eruption upon the chest and abdomen. There were also mucous patches upon both tonsils. There was pain and tenderness over the inner aspect of the upper third of both shin bones.

She was given mercury and chalk tablets internally, and unguentum hydrargyri was applied to the chancre. The patient was again seen on February 16th, by which time the ulcer on the lip had perfectly healed, leaving its site only slightly indurated. There was no rash whatever, and she appeared to be in perfect health.

On one of her visits to my office, the patient, as a possible solution of the riddle of how she became infected, told me of a custom of which, up to that time, I had known nothing. She said "that in some of the hair-dressing establishments, the hair-dresser, as a final touch, drew a moistened "rouge stick across the lips of her customers." This "rouge stick" is a cylinder composed of a firm, red ointment. The firmness necessitates a slight moistening before being applied, and, disgusting to relate, this is frequently accomplished by the hair-dresser first putting it in her own mouth and then deftly drawing it across the lips of her customers. Then, again, all customers are treated with the same "stick," and my patient told me that "in the shop where she usually went to have her hair dressed she had noticed many 'chemical blondes' and otherwise strikingly dressed women." As far as the character of the young woman under consideration is concerned, however, it may here be remarked that during the entire terrible ordeal of doubt and anxiety which she went through before the diagnosis was absolutely confirmed, she conducted herself in an entirely modest and straightforward manner, so that it was not held likely that she acquired the affection otherwise than by accident. The fact that she went to a shop patronized by those females with whom Isaiah was so out of patience, "they who walk with outstretched necks and wanton eyes, mincing as they go," must not place her by inference among the unrighteous. Neither must her passive submission to an obviously filthy practice stamp her as being uncleanly, for people otherwise dainty in their ways, will passively submit through embarrassment or a desire not to offend to many things at the hands of barbers and hair-dressers.

It of course can never be known whether this patient

was actually inoculated with this public "rouge stick," but there was no doubt that she had a chancre of the lip, and there is also no doubt that this would be a perfectly reasonable way of conveying the disease. It would be analogous to the conveyance of syphilis by means of the stick of nitrate of silver of which there are so many cases on record, and the danger of which was so well recognized that Fournier advised that it be entirely banished from all hospitals and clinics.¹

It is not at all likely that this filthy use of the "rouge stick" is a custom peculiar to San Francisco, and with such a favorable means of conveying syphilis it is wonderful that cases so acquired have not been reported before. One would even think it would give rise to some of those fearful epidemics of the disease such as have been reported in glass-blowing establishments, where a whole row of workmen have contracted syphilis from the blowpipe passed from one to another.

A CASE OF FATAL INFANTILE ANEMIA, WITH GREATLY ENLARGED SPLEEN.

By HERMAN F. VICKERY, M.D.,

OF BOSTON;

INSTRUCTOR IN CLINICAL MEDICINE AT THE HARVARD MEDICAL SCHOOL; PHYSICIAN TO THE OUT-PATIENT DEPARTMENT, MASSACHUSETTS GENERAL HOSPITAL.

H. M., aged eighteen months, born of Portuguese parents, was brought to the out-patient department of the Massachusetts General Hospital, and came under



Anemia, with greatly enlarged spleen, in a child aged eighteen months.

my care December 4, 1895. The family history was good, except that the father, a sailor, had suffered severely

¹ Quoted by F. Muenchheimer. "Ueber extragenitale Syphilis-infection." *Archiv f. Dermatologie u. Syphilis*. Bd. xl, S. 200.

from malaria. No history of venereal disease was obtained from either parent. The patient had been fed partly upon breast-milk and partly upon raw, undiluted cow's milk. He seemed well until eight months old, when he began to grow pale and weak, and the abdomen became swollen and hard. These symptoms persisted and increased. Relief was sought especially for a persistent diarrhea. There were three or four greenish, liquid movements daily.

On physical examination, the child was found to be feeble, ill-nourished, extremely pale, and appeared to be suffering. The anterior fontanelle was still open. There was a slight rosary where the ribs joined their cartilages. The epiphyses were somewhat enlarged. In the neck, axillæ, and groins hard glands about the size of a pea could be felt. The rectal temperature was 99° F. The chest was normal, except that the left base was encroached upon from below. The liver was slightly increased in size. The spleen was uniformly enlarged and hard. It reached slightly beyond the navel toward the right, and extended downward to within two fingers-breadth of the anterior superior spine of the left ilium. The blood contained an excess of white corpuscles.

On December 13th, the hematocrit demonstrated the number of red globules as 2,500,000, and the white as 25,000 per cubic millimeter. The percentage of hemoglobin was thirty-two. A differential count of the white corpuscles was made at this time by Dr. W. H. Smith, and on January 23d two counts were made by Drs. Richard C. Cabot and Henry F. Hewes, respectively. The accompanying table gives the results of these counts.

BLOOD EXAMINATION.

Smith, Dec 13th.		Cabot, Jan. 23d.	Hewes, Jan. 23d.
Red cells.....	2,500,000	2,500,000	
White cells.....	25,000	22,000	
Hemoglobin.....	32 per cent.		
No. of white cells counted	250	1000	1000
Small lymphocytes.....	16 per cent.	48 per cent.	30 per cent.
Large lymphocytes and transitional cells.....	16.7 per cent.	8.9 per cent.	10 per cent.
Polymorphonuclear neu- trophils.....	42.5 per cent.	29.4 per cent.	38.6 per cent.
Eosinophiles.....	10.4 per cent.	4.8 per cent.	9.2 per cent.
Myelocytes.....	12.8 per cent.	8.2 per cent.	6.6 per cent.
Normoblasts.....	104	57	72
Megaloblasts.....	173	92	250
Microblasts.....		48	116
Cells with karyokinesis..		6	
Porkilocytes.....		a fair number	
Microcytes.....		a considerable number	
Macrocytes.....		a few	
Parasites and Polychro- matophiles.....		none	
Erythroblasts of Löwit..			28

It will be seen that the number of red corpuscles was larger than in pernicious anemia, that the case certainly was not one of lymphatic leukemia, and that the number of white cells was too small for splenic-myelogenous leukemia. Myelocytes and nucleated red blood-corpuscles are seen in both pernicious anemia and splenic-myelogen-

ous leukemia. "The presence of myelocytes in numbers," remarks Dr. Hewes in his report, "with the pernicious anemia-type of blood, always suggests to me that the two diseases, pernicious anemia and myelogenous leukemia, are but different types of the same pathologic condition." Cabot,¹ after discussing this very case, said, "We meet with cases in infancy which are apparently intermediate between leukemia and pernicious anemia."

It seems to the writer that there has not yet been gathered a sufficient number of reports of cases, since the new methods of studying the blood have been developed, to furnish a basis for exact classification. It is, therefore, wiser to report all such observations and to leave the interpretation of them until a later day. Many would call this an instance of the disease described by Von Jaksch, under the name of "Anemia Infantum Pseudoleukemia." Rachitis, which was present in a moderate degree in this patient, may cause great enlargement of the spleen, as has been shown by Dr. J. Lewis Smith,² who stated that "in a recent very anemic and fatal case of rachitis, in the New York Foundling Asylum, the spleen extended below the level of the umbilicus."

The case was regarded as hopeless. Advice was given about feeding, and $\frac{1}{2}$ minim of Fowler's solution of arsenic, afterward increased to 1 minim, thrice daily, was prescribed. The digestion improved, but the patient grew weaker and died about two months after he was first seen. There was no autopsy.

AN ADDRESS.

BELLEVUE AND ITS RELATION TO MEDICAL PROGRESS.³

By LANDON CARTER GRAY, M.D.,

OF NEW YORK;

PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE
NEW YORK POLYCLINIC.

THE alumni of this college who graduated a quarter of a century ago look back with very tender memories to the remarkable men then composing its faculty, probably the most brilliant group of medical teachers ever gathered together in this country. By an easy effort of the memory, so striking were their characteristics, we can recall them all: Austin Flint, with his massive head and benign face, which was once compared to that of Fénelon, the French prelate and author; James R. Wood, the incomparable operator, eagle-eyed, rubicund of visage, spotlessly attired in his dress suit, even during the morning, and invariably adorned with a buttonhole nosegay; Van Buren, grand of manner, with an easy flow of simple words, and his high head knocking the stars; Hamilton, erect in his military bearing and precise in language; Barker, husky of voice, but of strikingly commanding presence; Isaac E. Taylor, a tremendous man, as I recently heard him called; Sayre, now living at a ripe age, with the satisfaction that is rarely vouchsafed a man of genius, of seeing his own original

¹ "Clinical Examination of the Blood," p. 345.

² Starr's "American Text-Book of Diseases of Children," p. 342.

³ Delivered on the occasion of the laying of the cornerstone of the new building of the Bellevue Hospital Medical College, New York, November 13, 1897.

ideas universally accepted; and Austin Flint the younger, whose lectures are to-day as lucid and charming as of yore, when we sat on the benches nervously apprehensive lest a mistake of one-hundredth of an inch in the diameter of a Malpighian corpuscle or blood-globule should make us miss our sheepskin.

We medical men have no saints, or else this school would be our shrine. But it is doubtful after all, whether laying the cornerstone of a medical school is not as important as the same ceremony in relation to a church, or whether any power short of omniscience itself can determine which is the most far-reaching in effects; for the minister and the physician certainly have an identical purpose, the relief of human suffering, although each attains his purpose in his own way, the former by the inculcation of ethical principles and the belief that happiness will come after death, the latter by easing pain during life by material means. It should be no reproach to either Religion or Medicine that their agents must be of necessity fallible human beings, who are often cruel and short-sighted, but it should be remembered that the persecutions of the one and the cruel methods of the other are more frequently the outcome of organic limitation of the human brain than of unworthy motives. In the dawn of civilizations, as Herbert Spencer has shown, the priest and the medical man were one, but with the differentiation of pursuits incidental to the evolution of society they have gone apart, notwithstanding their real unity of purpose. Nevertheless, even to-day most of the charitable work of the church would be impossible without the aid of the physician. Go down the street into Bellevue's great city of the sick, into its great wards, teeming with patients, and you will be impressed at every turn with the evidences of man's humanity to man, but at the same time you will be very apt to forget that back of it all is the medical school—even the precise cleanliness is due to a physician, because cleanliness is nothing more than popular antisepsis, while antisepsis is only scientific cleanliness; aye, and back of every hospital, dispensary, and sick-room in the land is the medical school. The bubonic plague, now limited to the East, extended throughout Europe during the Middle Ages, causing hundreds of thousands of deaths. Typhus fever, which was familiar to practitioners thirty years ago, has never been seen by many middle-aged men in this room. The control of smallpox is so efficient that numerous insurance companies do not require vaccination on the part of applicants. We all remember how the Asiatic cholera knocked at our doors a few years ago, and failed to get in. The death-rate of diphtheria has been lowered fifty to seventy-five per cent. The number of people in the community wearing eye-glasses is a striking object lesson of what the oculists have done, and every medical man is familiar with the revolution of recent years in the treatment of women's ailments, nervous and mental diseases, and surgery. What has rendered all these improvements possible is the medical school. In it has been taught the natural course of disease and the results of the employment of medicinal agents, and through it has come the training school and the vast improvements in hygiene and dietetics.

The prize of the French Salon in 1892 was given to a picture by Fritel, entitled "The Conquerors." It represents a serried phalanx of magnificent warriors, whose spears glisten across a vast plain as far as the eye can see. In the van is Julius Cæsar, "the foremost man of all this world," as Shakespeare calls him, the Egyptian Rameses the II., Attila, the "Scourge of God," Hannibal, the Carthaginian, Tamerlane the Tartar, Napoleon, Alexander the Great, Nebuchadnezzar of Babylon, Charlemagne, and many others who have made history. On either side are the stark and naked bodies of the dead in ghastly array. But these were not the true conquerors of the world. Fritel should paint another picture representing a long white-robed procession, not bedecked with martial trappings, of those who have tried to lessen the sorrows of the world, no passing between aisles of the dead, but through tumultuous throngs of the glad living, singing pæans of praise and joy; and among these stately aristocrats would be found Jenner, who gave us vaccination; Morton and Simpson, from whom came ether and chloroform; Pasteur and Lister, who made modern surgery possible with antisepsis; Koch, to whom we owe tuberculin and antitoxin; and Koeller, who bestowed upon us cocaine, which has revolutionized minor surgery.

In a curious book lately published in Paris, I happened upon an astonishing illustration of the progress of medicine. It appears that in 1686, Louis the XIV., the greatest monarch of his day, was found to have a fistula. At first it was treated with a plaster composed by a lady of the court, but this proved unavailing, and twenty days afterward the abscess was opened with a cautery, which was applied one hour and a half. Then the waters of Barèges were recommended to his majesty, and four persons suffering from fistula were sent thither while the court surgeon experimented upon them with the waters. The waters of Bourbon were next exploited, and many individuals were put into the hospital and treated with various vaunted remedies. Finally, at the end of a year, the knife was used, but before this was done all fistulous patients were operated upon by the surgeon, Fèlix, so that he might acquire the necessary skill. In spite of all these precautions, it was fifty-four days after the operation before the King could walk out. For this bungling surgical procedure the first surgeon, Fèlix, received 300,000 livres (equivalent to about \$120,000 of our money), a large property, and two titles of nobility. The next surgeon obtained 100,000 livres, another 80,000, a fourth 40,000, and the assisting apothecaries each 12,000. At the present day any fistulous Weary Waggles of the comic papers picked up intoxicated from the gutter and sent to the Island would be cured within the two-weeks' sentence which the magistrate would probably impose. This is the difference in 200 years of progress!

In view of this identity of purpose of the minister and the physician, it is rather singular that the former should have received such generous aid in the way of endowments in this country, while the latter has been given very meagre support. Abroad, in France, Austria, and Germany, the medical schools are endowed by the State, and it is a significant fact that from this portion of Europe,

especially from Germany, in which there are over fourteen endowed universities, have come all the great advances of modern medical science. In this modern world with its far-driven specializations, the specialist in money-making must necessarily accumulate wealth with more facility than the professional man, to whom pecuniary gains are only incidental, and whose chief energies are given to his profession; and medicine is the least lucrative of all professions, as so much teaching is required of its best men. No medical professor in the United States receives the salary frequently paid by a first-class insurance company to its medical director, and the compensation for one-to three-hours' daily teaching or the duties incident thereto, is usually less than the salary of the medical director of the smallest insurance company, while there is often no remuneration at all, for such services. This lack of endowment is not only extremely unfortunate in that it limits the facilities of the medical schools, but also because it absolutely debars many men from entering upon much magnificent scientific work which in itself is non-lucrative. Talent, after all, seeks the best market, just as do potatoes, cabbages, meat, or cattle. Some cloudy-minded transcendentalists may scout at this idea, yet it is an obstinate fact. What difference does it make, after all, even if it is so? The world should be thankful that every once in a while it has the great benefit of men who can think clearer and farther than the average, and it ought to encourage them in every way. Carlyle once said that England could very much better afford to lose its Indian Empire than to go without Shakespeare. A few years ago I was rather startled by the statement of a celebrated French surgeon who was visiting this country, that he believed New York would be the medical center of the world within twenty-five years, "because," he said, "you have the enormous population around you here, you have the wonderful transportation facilities which bring patients to you from all over your vast continent, you have the hospitals, you have the medical schools, and all that you now need are the endowments, which must come by that time out of the superabundance of the wealth of this richest of all lands."

MEDICAL PROGRESS.

Orthoform.—EINHORN and HEINZ (*Ther. Monatshefte*, October, 1897) have discovered a local anesthetic to which they have given the name of orthoform. It is a white, light, crystalline powder, without taste or smell. It is only slightly soluble in water, and therein lies its chief value. It dissolves just fast enough to cause a lasting anesthetic influence. Its action is observed upon mucous membrane, granulation tissue, or the surface of a wound. Either as a powder or mixed in a salve it is especially adapted for use upon burns of the third degree, upon painful ulcers, carcinomatous or otherwise. The remedy is absolutely non-poisonous. It limits the amount of secretion, absolutely prevents putrefaction and fermentation, and as a stimulating, healing dressing for a wound it has much to recommend it. In painful ulcers of the larynx, a single treatment with this drug will reduce the

smarting during a period of twenty-four hours. It may be used internally for the relief of stomach or intestinal pain. Its action is especially noticeable in ulceration and carcinoma of the stomach, but in cases of chronic gastric-catarrh or dilation little benefit is to be expected from its use. The muriate of orthoform is freely soluble and may be used internally, but is not adapted to subcutaneous injections on account of the intense pain which the acid solution occasions. On account of the lack of poisonous qualities it may be dusted upon surfaces *ad libitum*. In salves a strength of 10 per cent. is recommended. Internally, from 5 to 15 grains may be daily administered.

Eka-iodoform.—A preparation produced by SCHERING (*Münch. Med. Wochenschr.*, October 12, 1897) in which a small quantity of paraform is mixed with iodoform, is called eka-iodoform. According to Gottstein's investigations the remedy is sterile and has antiseptic action, properties which are lacking in iodoform. Thomalla has employed it in 100 cases with good results.

Detection of Spermatic Fluid.—According to LECCO (*Therapeut. Monatshefte*, October, 1897) it is easy to recognize spots of spermatic fluid, even after the lapse of some years. The following microchemic test is peculiarly sensitive. The spot should be soaked in water, and a drop of the solution introduced between the microscopic slide and the cover-glass; next, a drop of a saturated solution of iodine in potassium iodide is allowed to flow under the cover-glass—a number of remarkably beautiful crystals which are characteristic of spermatic fluid will then be formed. They are stained brown, and are rhomboidal in form, often occurring in the form of crosses. After the discovery of this reaction Lecco learned that Florence had independently made a similar discovery.

THERAPEUTIC NOTES.

Eunatrol as a Cholagogue.—Eunatrol is a name given to the oleate of soda. It occurs as a white powder, with a slight, not disagreeable, odor, and does not become rancid. It may be given in capsules or tablets, the daily dose being from 30 to 40 grains. BLUM (*Bull. Gen. de Therapeutique*, July 23, 1897) has found that eunatrol has a marked influence on the flow of bile, due presumably to a direct stimulation of the hepatic cells, since the drug acts in this way, both when given by the mouth and when injected subcutaneously in aqueous solution.

The Treatment of Contusions by Menthol Collodion.—NAME (*Jour. de Méd.*, September 12, 1897) gives the following directions for the treatment of contusions:

(1) Rigorous antiseptics; careful cleansing of the parts with ether. (2) The application once or twice daily of collodion, containing ten to twenty-five per cent. of menthol. Under this treatment pain quickly subsides and the constrictive influence of the collodion causes the disappearance of the effusion in from two to four days. Extensive contusions about the joints are not so favorably influenced.

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SATURDAY, DECEMBER 4, 1897.

DR. JACOBUS' ADDRESS.

THE inaugural address of the new president of the Medical Society of the County of New York, Dr. A. M. Jacobus, which was published in the last number of THE MEDICAL NEWS, contains much which merits careful consideration. The sharp criticism of the methods employed by the New York City Board of Health will meet with approval or indifference, according to the point of view of the individual physician who may or may not have come in personal contact with that body, but the fact remains that a sharp line should be drawn between its proper functions and the rights of the family practitioner, if for no other reason than to lessen the possibility of controversial encounters.

Dr. Jacobus dwelt at length upon one subject of such paramount importance that his words should sink deep into the inner consciousness of all and result in the abrogation of a system which, in the light of present knowledge and practice, is nothing less than a disgrace to intelligence. "The name of midwife in this city to-day is synonymous with feticide, infanticide, and homicide. Midwives have no legal status; it seems only requisite, in order that they may qualify for such a calling, that they shall have

attended one or more cases of confinement, perhaps their own, obtain a certificate from two physicians and file the same at the Health Department, when they are graduated to go on their errand of mercy and, not unfrequently, death."

It is unnecessary to lay stress upon the importance not only of again agitating this subject to the greatest possible degree, but of hastening the motion of legislative machinery whereby a law shall be enacted for the suppression of the evil entirely, or, at least, providing for the proper education and preparation of midwives as a class. The Society of Medical Jurisprudence has already appointed a committee of its members looking to this end, and it is sincerely to be hoped that the County Medical Society will join hands with it in its laudable endeavors.

Even to those who are supposedly familiar with the work of the Society it is a matter of surprise to learn of what has been accomplished during the past seventeen years in the way of protecting the public and the profession from irregular medical colleges, and physicians, midwives, and druggists illegally practising medicine. Until very recently, it has been the only organization in this city to prosecute offenders of this class, and the expense attendant upon the work during these years has amounted to nearly \$45,000. This admirable work must not be allowed to cease, but to carry it on more money is needed by the Society. The annual dues are but \$3, a sum within the reach of all. Five hundred new members are necessary, and this number, added to the eighteen hundred now on the active list, will make the County Society a greater power for good in State and municipal affairs than it has ever been. It is the duty of every reputable physician in this city to show his appreciation of what is being done for his benefit, individually, and for that of the profession collectively, by adding his name to the Society's list.

THE "TRADE" OF MEDICINE.

THAT the profession of medicine is the noblest of all vocations we personally are not inclined to doubt. By the world at large, it has been held as second only to that of the clergyman, the apostle on earth of the Great Healer. That this honored calling should in recent years have become so largely a mercantile pursuit, that it is affected by our practical ideas in a country where all is business is per-

haps not at all surprising. This spirit has largely contributed to degrade the physician from his former high estate; but a more immediate cause is the excessive development of specialism.

Far be it from our purpose to speak slightly of special work! The extraordinary development which has marked the progress of medicine and surgery during recent years has compelled men to devote themselves to some one branch, and no one knows better than physicians themselves how much mankind owes to broad and comprehensive specialism practised by so many distinguished men at the present day. But while mankind has profited, our own profession has suffered. Specialism has altered the personal relation between the physician and patient; it has made it a transient and generally a purely business connection. It has developed a large number of men of little special, and less general, knowledge of a great science, whose interest in the patient is limited to the amount of cash which he may pay. It has developed men to whom a profession is purely a matter of business, to whom the practice of medicine is as a department-store in which they have a counter.

Specialism, we believe, has greatly lessened that scholarship in medicine which was once characteristic. Indeed, there is a well-grounded fear that it will eventually banish the "scholar in medicine," whom Dr. DaCosta describes as "an attractive figure, indeed": "We see him pursuing what noble ends; ambitious for what lofty recompense; passing from life's beginning to its end, through what scenes of sustained satisfaction—not grasping and scrambling for petty prizes or fleeting reputation and wealth, but aiming only at lofty objects."

And with the scholar has passed also the old practitioner whose heart was generous and whose ways were gentle, who to a sound knowledge added a wide range of sympathies, liberality of thought and feeling, and who, above all, was deeply impressed with the ennobling responsibility of his profession.

We remember entering the office of such a physician, now dead, just as he arrived, deeply affected, from the death-bed of a patient and friend of fifty-years' duration. While we were talking the telephone bell rang, and he asked the writer to answer it. The message was from the wife of his former patient, who begged that, as their clergyman was away, would the

old doctor come and be with them to the end. What would the specialist of to-day, with his departmental view of man, his narrow sympathies, and his cash consultations, think of such a relation as this between the physician and his patient?

It goes without saying that there is nothing in specialism as such, which militates against a high purpose in medicine; the fault lies with some of the men who practise it. It is the modern, up-to-date, mercantile specialist who has done so much to change the science of medicine from a profession to a business; it is a business to them and as a business must be advertised, and hence the constant appearance of even reputable physicians in the public press; hence the "advance notices," as our theatric friends would say, which are given to the daily papers; descriptions of supposed discoveries of cures for this and that disease, as has become quite customary in many of our large cities.

What would our professional fathers, we wonder, think of the physician who covered the walls of his waiting-room with pictures of his patients, duly signed with such dedications as: "To the great Dr. —;," "To the only Healer;" "To the distinguished, the only surgeon;" "To my savior Doctor —." What would they think of a physician who pins notes from distinguished patients on his waiting-room door that they may be read by and duly impress those seeking his *distinguished* services? What would the old physician say of a doctor who gave his patients charts (with the doctor's name inscribed thereon in large letters) upon which the outline of the patient's heart was mapped out "before the treatment," "during the treatment," and "when discharged—cured." As a matter of fact the patient's condition (the charts to the contrary notwithstanding) had grown worse and worse and he sought another physician to find out what the *new* ailment was!

What would the older men think of physicians who, like railroads, announce special rates to professionals, preferring a hundred patients at \$3 a piece, with a picture, autograph, and inscription, which would serve to advertise when hung up in a proper place, to twenty-five at \$5 and no lithograph.

These examples are all of a kind, and could be indefinitely multiplied. Medicine to these men is a business, and the secret of business success being, as the late Mr. Barnum remarked, "to advertise,"

they follow the distinguished circus man to the best of their ability.

The man of whom we are speaking never allows the "Doctor" to be forgotten; his shop is ever with him. We are reminded in this connection of what Mr. Hayward says of Sir Henry Holland, that scholar, physician, and gentleman, "That, except when humanity required, he discreetly suppressed 'the doctor,' " and in speaking of his reticence about his patients, adds: "He rightly deemed that the physician's lips should be sealed like the confessor's." How strange this must read to some of our professional friends who so love to tell of those they are and have been treating!

That the trade idea in medicine is abroad in the land, or that advertising and unprofessional methods are resorted to by many men—even members of reputable medical societies—or, finally, that the old spirit which gave the older physicians and their profession so high a place in the community is dying, if not already dead, we suppose will hardly be denied.

And the remedy! He who runs may read. The advertising doctors are not likely to mend their ways—there is too much money in it; but it seems to us that a little, or rather a good deal of, discipline administered by medical societies might have a salutary effect on the particular kind of quack to which we have alluded.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION AND THE MARINE HOSPITAL SERVICE.

THE latest plea for a Department of Public Health in the *Journal of the American Medical Association* of November 20th, is so acrimonious and biased in many of its statements that we must protest against it as unbecoming the journalism of a liberal profession. Personal abuse is no argument, nor is misstatement of facts a help to the establishment of truth and right.

The necessity for a more authoritative, Federal supervision of general matters of public health is admitted by all. The question at issue is, shall a new department be created, with new officers and indefinite expenditures, or shall these public health functions be assigned to an already existing branch of the Treasury Department—the Marine Hospital

Service, a body of sanitarians already organized, disciplined, tried, efficient, and only needing more authority and the frank and manly cooperation of local boards of health to fulfil all the requirements of a national guardian of public health.

The organization of a National Board of Health with a departmental officer at its head, is an untried experiment. The plan proposed in the *Journal of the American Medical Association* establishes a deliberative body which in number and diversity of character would be equivalent to a third house of Congress. On the other hand, the Marine Hospital Service is an organization whose work is on record and whose future in the larger capacity of national guardian of public health can therefore be foreseen. In the face of an epidemic *action* is what is needed, not deliberation. In what way can this be better accomplished than by an organized body of men under military discipline and military orders?

Accusing the Marine Hospital Service of inefficiency and decadence proves nothing, and the characterization of its Supervising Surgeon-General as "indolent, arrogant, tyrannical, and playing for social prominence to the disregard of the best interests of his service" is likely to stamp the writer as more jealous than truthful. Neglecting the personal accusation because of its absurdity, let us take up the more serious charge that the Marine Hospital Service, as a conservator of public health, is inefficient. Its work in a recent epidemic is referred to as "the miserable fiasco at Brunswick." We shall here briefly outline the history of the yellow-fever epidemic of 1893 at Brunswick, and leave it for our readers to conclude for themselves, first, whether the Marine Hospital Service can be held responsible for the admission of the disease and, secondly, whether its management of the epidemic was a "fiasco."

In the first place it is now known that yellow fever occurred, but was not reported, in Brunswick in October, 1890. The epidemic of 1893 has been traced to gross violations of Treasury regulations by the local quarantine authorities. Several vessels from Cuban ports, instead of stopping at the Marine Hospital Station at Sapelo Island, as they should have done, went directly to Brunswick where they were dealt with by the local health authorities. It was the duty of the local quarantine officers to send these vessels back to Sapelo Island at once. This

was not done. The first death occurred June 25th, and the victim was the master of a probably infected vessel from Havana, which was disinfected by the local health officers and released in two days. Here again quarantine regulations were disregarded. The vessel should have been returned to Sapelo where it would have been disinfected and detained for at least five days instead of two. Had these precautions been taken, the master's disease would have been diagnosed and he would not have been allowed to go to Brunswick and stay at a hotel, which the local authorities permitted him to do.

Before July 17th, two other probably infected vessels arrived from Cuban ports with sand and earth ballast. The crews after discharging this ballast returned in each case to Brunswick and scattered about the city.

When it was found that the local authorities could not or would not enforce strict quarantine regulations, Marine Hospital Surgeons were ordered to the scene. Assistant Surgeon Branham, M. H. S., took charge of the local quarantine station July 31st, and died of yellow fever August 20th. He acquired the disease there and the probability is that the epidemic was due to the filth brought as ballast in vessels from Cuba. As soon as the first case was reported in Brunswick, the infected areas were depopulated, cordoned, and disinfected. When the disease became epidemic a comfortable detention camp was established twenty-five miles out of town to which refugees might go; revenue cutters and small boats patrolled the water-ways about the city; a cordon of land-guard posts surrounded the city at a distance of four miles, and a system of train-inspection was established.

The result of the vigorous enforcement of these precautions by the Marine Hospital Service was, that besides Brunswick and its environs, only the town of Jesup became infected, and this infection occurred before the Marine Hospital Service assumed control. The number of cases of yellow fever occurring during the epidemic was 1070, of which 46 were fatal; certainly a most creditable showing when one considers that the disease appeared early in the season and found the city in a most unsanitary condition.

Indeed, the successful manner in which this epidemic was confined and suppressed by the Marine Hospital Service is in striking contrast to the dilatory methods of the local quarantine officers.

ECHOES AND NEWS.

Quinin and the Klondike.—A physician of Louisville, Ky., is reported as making a fortune in the Klondike gold fields by selling quinin capsules at \$3 apiece.

Scarcity of Dissection Material at Cambridge.—It is said that the study of anatomy at Cambridge (Eng.) is seriously hampered by the difficulty experienced in providing subjects for dissection.

The Faculty of Medicine of Paris.—According to the *British Medical Journal*, the decree excluding foreign students from the medical classes of the Faculty of Paris will shortly be withdrawn.

Kangaroo Ailments.—It is said that kangaroos in captivity suffer greatly from enormous corns, several ounces in weight, and difficult to remove. In damp weather they also develop gouty symptoms.

Woman's Hospital Society of New York.—The following officers have been elected for the ensuing year: President, Paul F. Mundé, M.D.; vice-president, Leroy Broun, M.D.; secretary and treasurer, James N. West, M.D.

Spain Quarantines against Pensacola.—Owing to the death of a man from yellow fever at Pensacola, Fla., a royal decree has been issued in Spain ordering that all vessels arriving at Spanish ports from Pensacola be quarantined.

Music and Measles.—An orchestra composed of women was to give a concert at Stroudsburg, Pa., last week, but when the time came not one of them appeared. Inquiry revealed the fact that every member had been stricken with measles.

Gloves in Surgery.—Wolfer advises the use of gloves in all septic and aseptic operations, and also for making examinations of the mouth, rectum, and vagina. He employs the ordinary military glove of leather, which he keeps in three per cent. carbolyzed glycerin.

New Sources of Malarial Infection.—Dr. S. Pulverenti of Naples claims that he has established the fact that malaria can be transmitted in the dust of cereals and textile plants, flax, hemp, etc. It is, therefore, possible for malaria to be contracted without the presence of heat, moisture, or soil.

Death-Rate for Week Ending November 27.—The Bureau of Vital Statistics of the New York Health Board reports 611 deaths, including 11 from measles, 6 from scarlet fever, 18 from diphtheria, 5 from typhoid, 37 from heart disease, 88 from pneumonia, 88 from phthisis, and 51 from kidney disease.

Bilharzia Ova.—At a recent meeting of the London Pathological Society, live *Bilharzia* ova in the process of hatching were shown under the microscope. The parasites were obtained from a soldier invalided home from Mashonaland, where it is supposed he contracted the disease while bathing.

Healthfulness of Cycling.—After a prolonged consideration of the subject, the Paris Medical Society has come to the conclusion that cycling is excellent exercise for healthy people, is very beneficial for those suffering from nervous disorders, but is undesirable for delicate people who are liable to suffer from over-fatigue.

Milk and Disease.—In a communication made by Professor Delépine at a recent meeting of the Pathological Society of Manchester, England, in regard to the conditions under which cow's milk becomes pathogenic, *time* and *temperature* were given as the most important factors in rendering milk unfit for consumption.

American Association for the Study and Cure of Inebriety.—The twenty-seventh annual meeting of this Association will be held December 8, 1897, in the Hall of the Washington Home, 41 Waltham street, Boston, Mass. Many men prominent in the study of this question both in this country and abroad, will take part in the meeting.

Obituary.—The death is announced of Dr. P. Castells y Bellespi, Sanitary Inspector of the Province of Barcelona, Spain. Death was due to typhoid fever, which he contracted while engaged in combating an epidemic of this disease. He was much interested in preventive medicine, was editor of the *Revista de Higiene y Policía Sanitaria*, and was also secretary of the Editorial Committee of the *Gaceta Medica Catalana*.

Yellow-Fever Statistics.—The Marine Hospital Service reports the total number of cases of yellow fever up to November 19th as follows: Louisiana, 1847; Mississippi, 1625; Alabama, 740; Tennessee, 52; Texas, 16; Illinois, 4; Georgia, 3; Florida, 1; Kentucky, 1. Total number of cases, 4289, of which 446 proved fatal, or an average of about 10½ per cent. In Mississippi the death-rate was less than 6 per cent.; at New Orleans, 14⅓ per cent., and something less than 13 per cent. at Mobile.

An Antiseptic Dwelling.—Dr. W. van der Heyden, the bacteriologist, has recently had constructed an antiseptic residence at Yokohama, Japan, the walls of which are made of large blocks and slabs of glass mounted in metal and hermetically closed. Ventilation is provided for by small openings near the ceiling of the upper story, which allow egress of air without permitting the entrance of the outer air, which is exclusively supplied through a pipe, extending some distance beyond the house, into which it is forced, filtered, and sterilized by passing through glycerin.

Obituary.—Dr. Cornelius Olcott died recently of pneumonia at his home in Brooklyn, N. Y., in the sixty-ninth year of his age. He was born in Jersey City, N. J., of English parents, and was a descendant of Thomas Scott, one of the first settlers of Hartford, Conn. He studied medicine at the University of the City of New York, graduating in 1849. During the war he was a surgeon under General McClellan at Fortress Monroe, and later under General Grant at Fredericksburg. At the time of his death he was a member of the Kings County Medical Society.

The Philadelphia Medical Journal.—It is announced that the opening of the new year will witness the commencement of a new weekly medical periodical in Philadelphia, to be issued under the auspices of the leading members of the profession, including a number of gentlemen whose reputation is world-wide as teachers in the various colleges of that city. The editorial management will be entrusted to Dr. George M. Gould, whose experience and well-known ability give assurance that the new periodical will make its mark. We extend to our forthcoming contemporary the right hand of fellowship, for the harvest field is wide and there is room for all earnest laborers.

OBITUARY.

RESOLUTIONS ON THE DEATH OF CHARLES H. AVERY, M.D.

AT a stated meeting of the Medical Society of the County of New York, held at the New York Academy of Medicine, Monday, November 22, 1897, the following resolutions were adopted:

WHEREAS, Dr. Charles H. Avery, our esteemed and honored Secretary, has been removed by death, which occurred November 2, 1897,

Resolved, That we hereby express our deep sense of the loss which our Society has sustained in his decease; that we desire to bear testimony to the sterling integrity of his character, to his genial social qualities, and to his devotion to the interests of this Society, which he has so long, faithfully, and efficiently served in the capacity of secretary; that a copy of these resolutions be transmitted to the medical journals of this city, and an engrossed copy be sent to the family of our deceased associate.

JOHN L. WARREN, M.D.,

WILLIAM E. BULLARD, M.D.,

Committee.

CORRESPONDENCE.

TAPEWORM AS A CAUSE OF INTESTINAL PERFORATION.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: At the suggestion of Dr. H. N. Mateer, Professor of Biology in Wooster University, I enclose a short description of an instance of intestinal perforation in a rabbit by means of a tapeworm. I consider the case an odd one, and so submit it to your criticism with the hope that it may be deemed worthy of publication.

Upon opening the abdominal cavity of a wild rabbit a broad tapeworm, twenty-two or twenty-four inches in length, was found in the anterior, left, lateral portion of the cavity, between the colon and the greater curvature of the stomach.

Examination proved that the worm had escaped from the alimentary canal through a hole in the small intestine at a point about eighteen or twenty inches from the duodenal

loop. The wound from which it had escaped included half the circumference of the small intestine, the edges of which had the appearance of having been lightly attached to some other portion of the viscera, and were everted and resembled a circular lip. Very slight inflammation was present at this spot, but no other indications of an inflammatory process could be found elsewhere in the abdominal cavity. Fecal matter which had escaped from the wound was found in all parts of the cavity, about the stomach, and in the recesses surrounding the bladder and uterus. The greater part of the fecal matter consisted of minute, clean particles of cellulose whose cleanliness would seem to indicate that they had been free in the cavity for a considerable time. The cecum, colon, and rectum all contained the normal quantity of matter. When killed, the rabbit was running rapidly and gave no outward appearance of being weak or disabled.

W. F. SAYBOLT,

Biological Department, University of Wooster.
WOOSTER, OHIO, November 20, 1897.

SEWAGE FARMS.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: The editorial which appeared in THE MEDICAL NEWS of November 6th fails to point out a very important factor: A sewage farm cannot be successfully maintained when established haphazard upon soil of every sort. It makes a great difference whether or not the latter is sandy, and if so, of what variety. If established upon an impervious clay subsoil, which is nearly level, the results will be entirely different from those attained when the surface has a greater slope and is capable of soaking up and draining away such materials.

Furthermore, certain soils are the natural habitat of the nitrifying organisms, the office of which appears to be the destruction of pathogenic bacteria. There is great danger that the crude method of taking water from any source which happens to be convenient as the basis of a public water-supply, will be repeated in attempting to dispose of sewage by the method proposed.

M. A. VEEDER, M.D.

LYONS, N. Y., November 27, 1897.

MEDICAL REQUIREMENTS IN THE STATE OF WASHINGTON.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: I am in receipt of many inquiries concerning the medical laws of the State of Washington. In reply I would say that all persons intending to practice Medicine or Surgery in this State are obliged to pass an examination before the State Board of Medical Examiners.

These examinations are held the first Tuesday in both January and July. The January examination is held on the west side of the Cascade Mountains and the July on the east side. No temporary certificates are granted, and no exception is made to the rule.

F. H. COE,

Secretary of the Medical Society of the State of Washington.

SEATTLE, WASHINGTON, November 25, 1897.

A CORRECTION.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In my article published in your journal of November 13th, it was stated that during 1896 252,548 steerage passengers were inspected at this station. It should have read that this was the total number of passengers of this class who came to the United States during that period (1896), and out of this number 190,928 were inspected at this station. I desired to show that the great bulk of these people came to the Port of New York.

Very truly yours,

A. H. DOTY, M.D.

NEW YORK, November 23, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE HEALTH PROTECTIVE HOSPITAL FOR CONTAGIOUS DISEASES—DEATH OF DR. HARRISON ALLEN—COLLEGE OF PHYSICIANS OF PHILADELPHIA; SECTION ON OPHTHALMOLOGY; SECTION ON GYNECOLOGY—THE NEW KENSINGTON HOSPITAL FOR WOMEN—FREE LABORATORY DEMONSTRATIONS AT THE PHILADELPHIA POLYCLINIC.

PHILADELPHIA, November 29, 1897.

A MEETING was held on November 15th, in the office of the Mayor of Philadelphia, by a number of prominent laymen and physicians interested in the establishment in this city of a pay hospital for contagious diseases, and such advance in the project was reported that it is believed that the institution will be built in the near future.

The sudden death on November 14th of Dr. Harrison Allen, Emeritus Professor of Comparative Anatomy in the University of Pennsylvania, has removed another of the fast thinning group of men to whom Philadelphia owes much of her prominence in scientific matters. The local scientific bodies with which Dr. Allen was connected have passed appropriate resolutions upon his death.

A stated meeting of the Section on Ophthalmology of the College of Physicians was held on November 16th. Dr. William Campbell Posey presented a case showing metastatic iridocyclitis in both eyes, causing blindness; the exciting cause of the iridocyclitis was held to be an intense inflammation of the nose and its accessory sinuses resulting from long-continued inhalation of sulphuric-acid fumes to which the patient had been exposed. The determination of the exact cause of the blindness in this instance happened to be important, inasmuch as the patient had been an unsuccessful plaintiff in a damage suit against her employer, in whose factory she was obliged to expose herself to the acid fumes. Dr. William F. Norris exhibited a patient having a cyst of the orbit, causing a downward and outward dislocation of the eye on the affected side. Dr. H. F. Hansell showed a case of traumatic paralysis of the third nerve due to a gunshot wound on the nasal side of the orbit, without injury to either the eyeball, or to the optic nerve; a skiagraph of this case showing the foreign body (a No. 4 shot) *in situ* was shown by Dr. W. M. Sweet. Dr. George C. Harlan reported a case of transient pulse in the retinal artery, induced by the application of homatropin; and in his dis-

cussion of the case drew attention to the possible employment of this drug in the diagnosis of doubtful cases of glaucoma. Dr. G. E. de Schweinitz made some remarks on cases of central amblyopia, and showed field-charts of five different varieties of this condition. One class of monocular central amblyopia in certain cases of compound hyperopia without the presence of squint was referred to as being a likely cause of reduced vision. Dr. Edward Jackson read a paper on the technic of needle operations upon the lens and capsule, suggesting that most of the aqueous humor be allowed to escape, and as the lens comes close to the cornea to enter the needle through the capsule, making as small an opening as possible, and stirring up the lens substance freely with the point of the needle. By this maneuver the lens substance does not escape into the anterior chamber and set up an irritation.

At the last stated meeting of the Section on Gynecology of the College of Physicians of Philadelphia, held on November 18th, Dr. Edward P. Davis reported a Cæsarian section for impossible labor, in a woman with a contracted pelvis, 7½-months pregnant, with recovery of the mother, and safe delivery of the child. He also reported a symphysiotomy for a similar condition of the pelvic canal, and in this operation it was found that it was impossible to separate the pubic symphysis by the use of either the Galbati knife, or the bistoury, so that a saw, made after a model devised by the speaker, was used for the purpose, with immediate effect; ten months after the operation firm union had taken place. Dr. George E. Shoemaker reported the clinical histories and operation-notes of three cases of fibroid uterus, of an instance of pyosalpinx intermittently draining through the uterus, and of two cases of ovarian cysts. Dr. H. D. Beyea reported a case of acute strangulation of a prolapsed uterus and vagina, for the relief of which condition vaginal hysterectomy was performed; and Dr. J. M. Baldy related two similar cases, in both of which he had preferred to operate by the abdominal, rather than by the vaginal route.

Final touches to the new Kensington Hospital for Women, which has been reconstructed during the past summer, have been given, and the building has been formally thrown open for inspection. The new structure is of fire-proof construction throughout, provides for the accommodation of forty patients, and contains every improvement for the conduct of gynecologic surgery under the best auspices. It will be recalled that the hospital was founded in 1883, by Dr. H. A. Kelly of Baltimore, and at present is under the direction of Dr. C. P. Noble, his successor as surgeon-in-chief.

A series of laboratory demonstrations, free to physicians and students of medicine and lasting from November 15th until December 11th have been begun at the Philadelphia Polyclinic.

For the week ending November 20th, the total number of deaths reported in this city was 339, of which 103 occurred in children under the age of five years. Compared with last week, the mortality showed a decrease of 45, and with the corresponding week of last year, a decrease of 35. There were 230 new cases of contagious disease reported, as follows: scarlet fever, 56 cases, 3

deaths; diphtheria, 140 cases, 28 deaths; and enteric fever, 34 cases, 4 deaths.

The number of deaths occurring in this city for the week ending November 27th, reached a total of 394, an increase of 55 over the preceding week, and an increase of 5 over the corresponding week of last year. Of the total deaths 124 occurred in children under five years of age. New cases of contagious disease numbered 239, as follows: Diphtheria, 130 cases, 32 deaths; scarlet fever, 55 cases, 4 deaths; and enteric fever, 54 cases, 3 deaths.

OUR BERLIN LETTER.

[From our Special Correspondent.]

DR. FRANK OF CHICAGO READS A PAPER BEFORE THE BERLIN MEDICAL SOCIETY—ATTENDANCE AT THE MEDICAL SOCIETY'S MEETINGS—TWO JUBILEES OF PROFESSOR VIRCHOW—A CASE OF SPONTANEOUS DELIVERY IN THE COFFIN AFTER DEATH AND BURIAL—THE TREATMENT AND BACTERIOLOGY OF WHOOPING-COUGH.

BERLIN, November 20, 1897.

DR. FRANK of Chicago recently read by special invitation a paper before the *Berliner Medicinische Gesellschaft* on his absorbable button or coupler for intestinal anastomosis. It was discussed by Professor Landau, who has witnessed several experiments with the button upon animals. He has employed it in one case upon a human being, and was very much pleased with the result.

Since Czerny's announcement at the Congress at Moscow that he considered the Murphy button the best procedure for intestinal anastomosis the question of adopting some such mechanical aid has been a living one in Germany. *Magni nominis umbra*—the shadow of a great name stands for much in German surgery, and it is probable that for some time to come most anastomoses will be accomplished with the aid of some such coupling apparatus. Dr. Frank's invention is like Murphy's button in most respects, except that it is made of an absorbable material—decalcified bone—which ought to prove a very advantageous addition to the good qualities of the Murphy button, and so has attracted a good deal of attention here in Berlin.

The Berlin Medical Society has about 1100 members, and holds its meetings once a week. They are invariably presided over by Professor Virchow, begin exactly on the minute announced, 7.30 P.M., and are regularly attended by from 500 to 800 members. There are a good many qualities here that medical societies in other countries, especially our own, may well envy. This is particularly true of the large attendance which is really typical of the profession in Berlin, and is an index of the intense earnestness of purpose and lively interest in things medical which characterizes German physicians in general. Not the least noteworthy item is the invariable presence of the President, Professor Virchow, who, at the age of seventy-six, is still ready to learn, but even more ready to encourage others, by his personal example, to keep up with the advances in medicine by hearing the latest discoveries described and discussed.

Two Virchow Jubilees have been celebrated within the last few days. The one the celebration of the fiftieth year of his career as a teacher in the University of Berlin, the other the appearance of the Jubilee number of *Virchow's Archives*.

A committee was chosen to present congratulations to the aged Professor. It was composed of a number of distinguished teachers in the University, and was headed by the Rector Magnificus and the Dean of the Medical Department. Professor Virchow, when congratulated by the Dean upon the wonderful success of his teaching career, answered with characteristic modesty. His success, he said, had not been due so much to his own work as to the early realization that the field of scientific medicine was so great that one man, single-handed, could accomplish nothing that would produce an effect upon the current of medical thought, and so he had drawn around him a school whose work had been wide and important enough to make an impression. He had been more fortunate than others in the associates who had come to him, but it was to them and not to him alone that the glory of success was due.

The Jubilee number of the *Archives* contains as a frontispiece a picture of the Master himself, and opens with a few words from him commemorative of the fiftieth year of the existence of the *Archives*. He says, with pardonable pride, that it has accomplished much more than its prospectus dared claim; that its long series of volumes (150 in number) form a rich and ever richer source of scientific medical instruction; but more than all this has been its influence in making clear to the world the essential unity of medical science. It is this that has been the main aim of its editor during the long years of its existence, and it is the accomplishment of the purpose that is his pride and strength in his old age.

As he states, the Jubilee number appears without pomp or ceremony. Its scientific spirit is too serious for that, but it constitutes, in the articles contained, the best proof of how it has ever combined the practical with the purely scientific in medicine. While founded on original work of the highest order, the articles on "The Production of Amyloid Degeneration," "The Pathological Anatomy of the Malpighian Bodies in the Kidney," "The Mechanism of Urination and of Bladder Closure," "The Connection between Section of the Vagus and Changes in the Heart-Muscle," and finally, "The Quantitative Estimation of Glycogen in the Liver" (by a compatriot, by the way, Dr. A. E. Austin of Boston), are all such as must be of lively interest to the general practitioner as well as to the scientific seeker after truth for its own sake.

An account of one of the rare cases of spontaneous delivery of a child some days after the death of the mother appeared in the last number of the *Vierteljahrsschrift für Gerichtliche Medizin*, and has given rise to considerable comment. The case is very well authenticated, as the body passed through the hands of medical and legal public officials before burial, so that the details are a matter of legal evidence.

The woman had been found dead in the river under

circumstances which seemed to point to suicide. Careful examination of the body was made to be sure that there was no evidence of injury previous to the immersion, and it was noted that she was in an advanced stage of pregnancy. Ten days later circumstances came to light which seemed to point to foul play, and the body was exhumed for further and detailed examination.

A tumor was found projecting from the vulva which had not existed at the time when she was placed in the coffin. This was found to consist of the completely inverted uterus and vagina. A little below it, lying upon the lower limbs, was a fetus 36 cm. in length.

Dr. Bleich, who reported the case, discussed the possible causes of the delivery, and considered that the usual causes do not afford a sufficient explanation. Neither the development of gas within the abdomen and the consequent pressure exerted upon the fundus uteri nor tonic contraction of the uterus due to *post-mortem* rigidity are sufficient explanation of this remarkable phenomenon, as far as he is concerned, neither nor both of them can account for it, if one is to consider the uterus as being in its ordinary *post-mortem* condition. He considered it probable that during the death agony there had been active contractions of the uterus which had almost accomplished the extrusion of the child, and then, that the pressure of putrefactive gases in the abdomen and the further tonic contraction of the uterus were sufficient to have completed the process of delivery.

In any case, the occurrence of an authentic instance of delivery after burial where there is not the slightest chance for doubt as to the mother's death before burial ought to prove a great source of consolation to those who have found in the published reports of such cases some confirmation of their fears as to the dread possibility of being buried alive.

Professor Hübner, in a recent lecture on whooping-cough, began with the question of treatment by asking the student who was going over a case with him (it is a regulation of the University here that a student must always study the case with the professor at a clinic), "What is the best remedy we have for whooping-cough?" The immediate answer was, "Bromoform." "But does it do any good?" Almost as immediate came the answer, "No," at which there was a titter promptly suppressed by the Professor, who said, very seriously, "That is just the state of the case; it is our best remedy, but how much good it really does is problematic. In some cases it seems to be of real service, but there are many in which it does not seem to have the slightest effect on the course of the disease."

To the question, "How long does whooping-cough usually last?" the answer was the usual text-book formula, "Four to six weeks"; but Professor Hübner assured the embryo doctor that "if all his patients with pertussis were better in two to three months he would be indeed lucky, while some of them would last the year out, despite his best efforts." Notwithstanding advances in medicine, the therapeutics of most of the children's diseases are no better than they were half a century ago. It was hoped that the demonstration of the bacteriologic cause of whooping-cough

would give a foundation for rational therapeutics; but the bother seems to be, so far, that the discoveries of the microbe of the disease have been too frequent and varied to be of practical value, and the claims of discoverers too little substantiated by later investigators to as yet awaken the hope that specific treatment may soon be possible. There are claims for two microbes of the disease here in Berlin. The last one described resembles the diphtheria bacillus, and has been found in the sputum of patients. The secular press have taken it up, and considering that morphology corresponds to pathogeneity, have been exploiting the fact that the diphtheria bacillus, under two different forms, produces both diseases to no little discomfort of anxious parents whose children, or neighbor's children, have whooping-cough. Verily, the press has become a wonderful disseminator of truth!

The other microbe described here, and assigned as the cause of whooping-cough, is a coccus. It is not easily found in the sputum, but may be cultivated by inoculating tubes of agar with portions of the minute, clump-like masses which occur in the sputum of patients having this disease. These are usually coughed up at the end of a paroxysm, and it is generally considered that it is their tendency to persistently cling to sensitive portions of the mucous membrane which causes the paroxysms.

The colonies are closely agglutinated together in cultures. A whole colony must be taken for examination, and is found to consist of closely packed cocci. The agglutination in the media, resembling the tenacity of the clumps in the sputum, is one of the characteristics of the microbe, and is considered proof of its connection with the disease.

In France, however, another form of coccus is claimed as the bacterial cause of the disease, while it may be noticed in the report of the recent meeting of the British Medical Association at Montreal that there is an English claimant for the specific pathogeneity of a short bacillus—*Si quid vis excipias*.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

INVESTIGATION OF SOME OF THE DISORDERS OF THE HEART—LOCALIZATION OF RHEUMATISM AND CHOREA—PERMANENT CURE OF PYLORIC STRICTURE BY LORETA'S OPERATION—HEMIPLEGIA IN WHOOPING-COUGH—ONE-SIDED BLUSHING—TREATMENT OF UTERINE DYSMENORRHEA.

AT the opening session of the Medical Society, October 11th, the president for the coming year, SANSOM, gave an address upon the *Investigation of Some of the Disorders of the Heart*. In the examination of the heart it is important to keep the patient as tranquil as possible. On this account it is better to examine patients who come to a physician's office in their ordinary clothing before asking them to disrobe. More attention than is usual should be directed to the nervous system, especially to its relation to the cardiac reflex. Some practical points were given which are worthy of especial notice:

(1) Protrusion of the eyeballs, retraction of the upper lids, or tremor of the latter when the patient is told to

gently close the eyes, are often present in the early stages of Graves' disease, being associated with the tachycardia. They may also be found in other conditions, and are indicative of disorder or distress of the heart. (2) An examination of the auditory mechanism and of the pharyngeal tract is important, as trouble in one or the other of these situations may cause reflex irritability of the heart. (3) The pulse at the wrist should be carefully palpated, and its lessons supplemented by auscultation at first practised with the clothing undisturbed. (4) If fine muscular tremors of the trunk, limbs, or face are observed, there is probability of the existence of a disorder of the nervous mechanism of the heart, such as Graves' disease. (5) Afterward the chest should be examined with all the clothing removed. The author also discussed the significance of the different varieties of cardiac murmur.

At the meeting of the same Society, October 25th, CHURTON read a paper on the *Localization of Rheumatism and Chorea*. Nearly six hundred cases were tabulated, the points noted being the state of health before the attack, the assigned causation, the joints first affected, the occurrence of acetonuria, indicanuria, and constipation. The previous health was not good in the large majority of the cases. The causes assigned were chiefly exposure to the weather and injuries, the joints of the limbs which were chilled or injured being the first to suffer. The "toxin-local-injury" theory has been held by Duckworth and others. The toxin may be glycocin; if so, the micro-organisms will not be found in the blood, joints, etc., where they have been sought. From a study of 150 chorea patients no light was thrown upon the connection of arthritis and chorea, nor was any explanation advanced why the toxin settles in the brain when the latter disease occurs in rheumatic individuals. In the tabulated cases, however, there was no instance of chorea primarily caused by a chill, and no case of arthritis primarily caused by fright.

MACKENZIE said that rheumatism is expressed not only by arthritis and pyrexia, but also by inflammations of the serous membranes, cutaneous eruptions, subcutaneous nodules, and, of course, chorea. As a rule chill and wetting acting as localizing factors determine affections of the joints, while chorea is chiefly excited by fright. Age is another localizing factor. Chorea is common in children; arthritis is rare.

SANSOM disagreed with the opinion of Duckworth that arthritis and chorea are two manifestations of the same morbid process.

At a meeting of the Clinical Society, October 8th, WHITE and LANGTON related a case in which Loreta's operation was performed for relief of stricture of the pylorus. The patient was a man aged twenty-eight years, who during four years after recovery from typhoid fever, suffered from severe gastritis. Medical measures did not improve his condition, and upon opening the stomach, the pylorus was found to be so contracted that it admitted only a No. 1 catheter. Larger and larger instruments were cautiously passed, until the pylorus admitted two fingers. The wound in the stomach was then closed, and the patient entirely recovered. At the present time,

three years after operation, he is still in perfect health, and able to eat anything. The case was brought forward to show the success which might follow Loreta's operation; though it has been superseded by pyloroplastic procedures.

GOULD said that the chief objection to Loreta's operation is the probability of a speedy recurrence of the symptoms. He operated three times upon a patient for simple stricture of the pylorus, at intervals of a few months. Each time there was temporary relief, but later return of symptoms, and each time he found that the adhesions were more extensive than before. The patient, a few months after the third operation, was in a worse condition than at first.

ABRAHAM showed a *child aged two years suffering from hemiplegia*, which began in the first days of a whooping-cough of moderate severity. One evening she was suddenly seized with an attack of right-sided convulsions and became unconscious. The pupils were dilated and insensitive to light, and there was marked nystagmus. The temperature during the attack was 103° F. Two days later she presented complete right-sided hemiplegia, from which she has since partially recovered. The case was considered to be one of cerebral hemorrhage.

WEBER showed a *curious case of one-sided blushing following eating*. The blush involved the cheek and ear, and in the cheek it was associated with perspiration. The young man so affected, had formerly a suppurating gland behind the ear, and Weber explained the blushing by the supposition that some of the vasoconstrictor branches of the cervical sympathetic were involved in the scar, and that when the parotid gland became distended during mastication it dragged upon or compressed these branches.

At a meeting of the British Gynecological Society, October 14th, KEITH read a paper on the *Treatment of Uterine Dysmenorrhea*. The pain in these cases is caused not by the stricture, but by the bending of the uterus *plus* the thickening of the uterine mucous membrane, and also by the congestion naturally present at the commencement of menstruation. General treatment should first be employed, chiefly with a view to keeping the patient warm and thus preventing internal congestion. For the severe cases in which all remedial measures have failed, attention was directed to local treatment by stem pessaries, dilatation, and division of the cervix (Dudley's operation), and by division with stitching (Apostoli's operation). The advantages of the last two procedures are not so well known as they should be. A number of the members of the Society mentioned good results which they had obtained from combined dilatation and suture of the cervix.

Berlin.

CLINICAL EXPERIENCE WITH LUMBAR PUNCTURE, AND THE CONDITIONS IN WHICH IT IS OF VALUE IN DIAGNOSIS AND TREATMENT.

At the session for Internal Medicine, October 18th, STADELMANN described his *clinical experiences with lumbar puncture*. The observations extended over about one hundred cases. In tuberculous meningitis (sixteen cases) the fluid in the spinal canal is usually under high

pressure, but there is very little of it. The spinal fluid is sometimes clear, containing only a few flakes of fibrin or more rarely leucocytes, but it is sometimes cloudy or even purulent or bloody. Proof of the existence of tubercle bacilli in the fluid may be of great diagnostic value. The speaker had found them in only twenty-two per cent. of the cases; either because the tubercles were still intact, or situated only in the meninges of the brain, or in the deeper portions of the pia, or else because these were instances of the so-called *meningitis serosa*, which latter is with difficulty distinguished on clinical grounds from tuberculous meningitis.

In purulent meningitis (seven cases) the fluid is under pressure and contains various kinds of cocci, but it is occasionally free from bacteria, and the case can then with difficulty be differentiated from one of tuberculous meningitis. The clinical symptoms are far more reliable than the lumbar puncture, the value of which from a diagnostic point of view, is at present over-estimated. The bacteriologic examination must be made at once, otherwise the bacteria will die and not appear in the cultures. Also, in cases of suppurative meningitis, the fluid will sometimes be sterile for reasons similar to those given above; hence, only in those cases in which a positive result is obtained can the differential diagnosis be made.

In abscess of the brain the amount and character of the fluid and the pressure under which it exists are subject to variations. Even a complicating meningitis cannot be determined with accuracy. A negative result is no indication that it does not exist. Sometimes the spinal fluid is increased in thrombosis of the sinus.

In acute infectious diseases, especially in pneumonia, suspicion of a complicating meningitis may be confirmed by lumbar puncture, if pus or pneumococci can be proven to exist in the spinal fluid. In cryptogenetic septicemia, streptococci are found in the spinal fluid just as in the blood. Lumbar puncture is sometimes of value in obscure cases without history; for example, in unconscious or delirious patients. In tumors of the brain, lumbar puncture as a therapeutic measure has been vastly over-estimated. Its action is in fact unfavorable, not to speak of the sudden death which may follow. The diagnostic value of this procedure is never greater than that of the clinical symptoms.

In cerebral hemorrhage, if the spinal fluid contains blood, one must first assure himself that it is not derived from an accidentally punctured vein; hence, the puncture must be repeated in several places. In cerebral hemorrhage, the blood may be from the surface of the brain or from a ventricle. An evenly tinged spinal fluid may be looked upon as evidence of such bleeding. It may be of prognostic value to determine in this manner that the blood has burst into a ventricle. It is not possible to make a differential diagnosis between apoplexy, softening, and embolism by means of lumbar puncture. The bad effect of brain-pressure, as the result of hemorrhage, cannot be relieved by this means. In fact, puncture may cause the hemorrhage to begin again.

In hydrocephalus, encephalitis hemorrhagica, uremia, encephalopathia saturnina, etc., lumbar puncture gives

only unsatisfactory results. Puncture shows that in epileptic attacks pressure is increased. In pneumonia, scarlatina, typhoid, and other diseases, the spinal fluid is increased. The observer has never seen any therapeutic result follow lumbar puncture. To reiterate, it has a diagnostic value only if a positive bacterial cause is isolated. Unless bacteria are proved to exist, one dare not conclude from the cloudiness of the fluid that meningitis is present. Above all things lumbar puncture is not to be depended upon as a means of diagnosis to the neglect of clinical symptoms.

REVIEWS.

THE DISEASES OF THE MALE URETHRA. By R. W. STEWART, M.D., M.R.C.S. New York: William Wood & Co., 1896.

IT would be manifestly unjust to expect in a work of the compass of that before us a complete and exhaustive treatise on the fruitful subject with which it deals. In a work, however, in which it was the declared "object of the writer to place before the reader the diseases of the urethra as viewed from the standpoint of modern knowledge," it is decidedly disappointing to find no mention of the Gram stain as a differential test for the gonococcus, and only the most meager references, without any description of the methods, to the possibility of cultivating that organism on culture media.

Not less disappointing are the chapters on the treatment of gonorrhea. It is eminently proper, eminently conservative, but it might all have been written twenty years ago. Surely, the modern treatment of gonorrhea has gone beyond the Lafayette mixture and sulphate of zinc! The chapters on chronic urethritis, and on stricture, may, on the whole, be commended as a just and conservative presentation of the subject.

Most of the illustrations in the work are antiquated, and those copied from a well-known atlas of anatomy should be credited to Heitzmann, not Hitzmann. In general, however, the book is typographically satisfactory.

THE ESSENTIALS OF OBSTETRICS. By CHARLES JEWETT, M.D., Professor of Obstetrics in the Long Island College Hospital, Brooklyn, New York. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1897.

IN this volume of 356 pages Dr. Jewett has embodied what he considers the needs of the student for the acquisition of his groundwork of obstetric knowledge. No one doubts the value of a work of this character, limited as its field is. When the manual, too, is written by one who has so long and favorably been known as a teacher of obstetrics, the worth of its contents is more than doubly enhanced.

The surprising thing in regard to the book is that Dr. Jewett has covered so much ground so well in so little space. We have here anatomy and physiology, embryology, the phenomena of labor, the pathology of pregnancy, of labor, and of the puerperium, and obstetric surgery. Contrary to the title, more than mere essentials are included.

It is only necessary to mention that the scientific feeding of infants, and the chlorinated soda-method of disinfecting the hands, are discussed to show how thoroughly up to date Dr. Jewett's book has been brought.

The black and colored illustrations are admirably chosen, and the book presents a handsome typographic appearance.

NOTES ON PATHOLOGY. For Students' Use. By W. A. EVANS, B.Sc., M.D., Professor of Pathology, Medical School of the University of Illinois; Professor of Pathology, Milwaukee Medical College. Etc. Chicago: The W. T. Keener Co., 1897.

AS this work is not intended as a treatise on the subject of pathology, but simply as a manual for the student, a detailed description of the subject cannot be expected, but the book should certainly have been a safe guide. There are many sweeping statements without necessary justification, and much carelessness in arrangement and in the literary construction. Parts of the book we can heartily endorse, but where the student is concerned there should be nothing which can be criticized. The book is made with blank pages for notes, alternating with the text, and for advanced workers may occasionally serve as a work for quick reference.

THE LIVER OF DYSPEPTICS, AND PARTICULARLY THE CIRRHOSIS PRODUCED BY AUTO-INTOXICATION OF GASTRO-INTESTINAL ORIGIN. By DR. EMIL BOIX. Authorized Translation from the Latest French Edition, by PAUL R. BROWN, M.D., U. S. Army. New York: Putnams, 1897.

AFTER a brief general introduction, Boix discusses in detail the auto-intoxication of gastro-intestinal origin, separate chapters being devoted to the poisons of the alimentary tract, and the conditions which favor their production. These poisons are the result of fermentation; they are much more numerous than is commonly supposed. Among them he includes lactic, acetic, butyric, valeric, propionic, oxalic, the various fatty acids, aldehydes, acetones, the various derivatives of albuminous digestion, indol, skatol, etc. The causes which favor their production are especially motor insufficiency and stagnation of the ingesta.

In Part II. the liver of dyspeptics is considered at full length. Although many objections might be raised against the use of the term "dyspeptics," yet our language possesses no other word which can readily replace it. The body of the work is devoted to a very elaborate study of the hepatic congestion and cirrhosis which occur in the course of gastric diseases; many cases of his own and others are cited. A large amount of original work is described in the next two chapters on the etiology and pathologic anatomy of these lesions. Many striking conclusions are reached which are entirely opposed to currently accepted opinions. Boix's views on the effects of alcohol are especially striking; for these the reader is referred to the book itself which will amply repay a careful perusal.

The translation is excellent and Dr. Brown deserves our thanks for having given English physicians the op-

portunity of studying this work at first hand. The letter-press and the colored plates reflect credit upon the publishers.

A PRACTICAL MANUAL OF THE DISEASES OF WOMEN AND UTERINE THERAPEUTICS. For Students and Practitioners. By H. MACNAUGHTON JONES, M.D., M.Ch., Master of Obstetrics (Honoris Causa), Royal University of Ireland; Fellow of the Royal College of Surgeons of Ireland and Edinburgh. Seventh edition, revised and enlarged, with 565 illustrations. New York: William Wood & Co., 1897.

THIS is a handy little volume of 900 pages, and is the result of an effort on the part of the author to "provide an epitome of the teachings and opinions of the greatest living gynecologists." It is profusely illustrated. Its teachings have a strong English flavor, and English and German methods are presented rather than those of French or American operators. The author recognizes the sway of gynecology over the bladder, ureters, and kidneys, and devotes a chapter to Kelly's method of catheterization of the ureters, and the treatment of affections of those organs. That a seventh edition has been necessitated at so early a date indicates the popularity of the work.

A TEXT-BOOK OF MEDICAL AND SURGICAL GYNECOLOGY. For the Use of Students and Practitioners. By R. W. GARRETT, M.A., M.D., Professor of Obstetrics and Gynecology in the Medical Faculty, Queen's University, Kingston; Gynecologist to the Kingston General Hospital. Containing over 100 illustrations. Toronto: J. A. Carveth & Co., 1897.

THIS work is designed as a means for ready reference, and an index to the standard writers on the subject of gynecology. The chapters are based upon the notes of the author from which he has given his lectures to a medical class. These notes have been extended so that the volume may be of service to the general practitioner. The author not only presents his own views, but also those of the standard authorities on the various subjects discussed. The volume consists of 419 pages, and briefly covers the entire subject.

A QUIZ MANUAL OF HISTOLOGY, GENERAL AND DENTAL. By CHARLES B. REED, M.D., Professor of General Histology, Northwestern University Dental School; Assistant Obstetrician, Chicago Lying-In Hospital, Etc.; and FREDERICK B. NOYES, B.A., D.D.S., Professor of Dental Histology, Northwestern University Dental School. Chicago: The W. T. Keener Co., 1896.

THE authors of the little volume before us have published this work as a guide to the student in histology. While we believe that this important branch of medicine can only be satisfactorily studied by individual use of the microscope, still, a book of this kind is of value to the student as an aid in his work. The authors have arranged in compact form all the essential facts to be memorized, and the work is a fairly complete and concise

summary of histology. About one-fifth of the book is devoted to dental histology, which is a unique addition to works of this kind. All in all, the book is a useful one, and is creditable to its authors and publishers.

THERAPEUTIC HINTS.

For Contusions.—Wash the injured part, and then paint twice daily with menthol in collodion (1-8 or 1-4). Pain will be relieved, and the resulting constriction of the vessels diminishes the discoloration and swelling. This treatment should not be used in case of contusion of a joint.

The Use of Tannoform.—Both the internal and external employment of tannoform is highly praised. In doses of $\frac{1}{6}$ - to $\frac{1}{2}$ -grain it has a rapid and favorable action in the enterocolitis of children, and, following the administration of castor oil, it is of equal service in dysentery. Externally, applied as a powder, it is useful as a remedy for hyperidrosis, and also for chronic ulcer in which it relieves the pain and energetically stimulates the granulations.

For Gastric Hyperacidity.—

℞	Tr. gentianæ	}	aa	3 ii.
	Tr. cascariillæ			
	Tr. cardamomii			
	Tr. absinthii			

M. Sig. One teaspoonful ten minutes before the two principal meals.

Iodoform as an Antiseptic.—In the treatment of infected wounds, furuncles, and gonorrheal inflammations, this drug is said to have no unpleasant systemic effects, and to be an improvement over iodoform. It should be used in the form of a powder in gonorrheal vaginitis, and for urethritis, in the form of a bougie, containing 20 per cent. of the drug.

It may also be employed as a salve, according to the following prescription:

℞	Iodoform	.	.	.	.	gr. xlviii
	Bals. Peru.	}	.	.	.	gtt. xv
	Lanolini anhyd.		.	.	.	
	Vaselini	.	.	.	.	q. s. ad. $\frac{3}{4}$ i.

M. Ft. ungt. Sig. For external use.

For Infantile Tetany of Gastro-intestinal Origin.—

℞	Bismuthi salicyl.	.	.	.	.	3 i
	Benzonaphthol.	.	.	.	.	3 ss
	Sacchr.	.	.	.	.	q. s.

M. Div. in chart. No. XII. Sig. One powder four times daily.

In conjunction with above administer the following:

℞	Potass. brom.	.	.	.	.	gr. xlv
	Chloral hydr.	.	.	.	.	gr. xv
	Syr. aurant. cor.	.	.	.	.	$\frac{3}{4}$ iss
	Aq. dest.	.	.	.	.	$\frac{3}{4}$ iii.

M. Sig. One teaspoonful three times daily for a child two to three years of age.

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ORIGINAL ARTICLES.

*THE CLINICAL AND PATHOLOGIC INTERPRETATION OF TIC, WITH SPECIAL REFERENCE TO ITS TREATMENT.*¹

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THE condition to which the term "tic" is applied is one which has great interest for me; first, because I see much of it, and, second, because its interpretation is difficult and its explanation unsatisfactory. It is a subject which has received entirely inadequate consideration. In this communication I have two objects in view: (1) To lay before you for your consideration some thoughts on the significance and pathogenesis of tic, and (2) to urge a more determined plan of treatment than is usually adopted. The word tic means literally a twitching. It is applied to an abrupt, rapid, and usually uncontrollable movement, the result of abnormal contraction of individual muscles or groups of muscles which normally act together to fulfil some physiologic purpose. The designation "tic" is a most appropriate one, though it has stood in the way of a more universal recognition of the condition as a pathologic entity.² It has been difficult for some to believe that the ordinary tics are not in reality habits, one variety having been described as a habit-spasm, while others have unfortunately considered the tics as atypical manifestations of chorea, and the dreadful phrase "a kind of chorea" has been applied to them. I should venture to state that tic has no more in common with chorea, be it acute or chronic, than it has with epilepsy; indeed, I am inclined to believe that it has much less. The atmosphere of the tics has been very much obscured by the use of the word choreiform to describe the movements, and also by their consideration with chorea in systematic medical treatises. I appreciate that we cannot drop the terms choreic and choreiform, but if we could when speaking of the tics it would be a decided gain.

It is important to understand that the term, although it suggests only the most prominent symp-

tom, oftentimes bespeaks an abnormality of the nervous system quite as demonstrable as that to which the terms epilepsy, hysteria, or migraine are applied. When the latter words are used, a certain well-defined significance is attached to them, and they call to the minds of the users clearly cut clinical pictures and well-known data concerning etiology and pathology. It is unfortunate that the word tic does not do as much. The only reason why the names hysteria and epilepsy have a more decisive application is that the conditions for which they stand have been more carefully and persistently studied. A similar amount of labor expended upon the tics would be followed, I venture to believe, by a corresponding amount of information.

In the definition which I have given nothing is said of the pathogenesis of tic or of the morbid conditions upon which it is dependent, for as yet but little is known of them. The twitchings to which the term tic may be applied vary in severity from the slightest movement of a part up to the most complex coordinated movement associated with obsession and the externalization of mental activity.

All tics may be classified primarily into (1) senile (acquired) tic, and (2) early tic, the last being further divided into two varieties, *viz.*, (a) degenerative and (b) acquired.

The senile variety is a convulsive or spasmodic manifestation in one part of the body or another, usually in the face, almost invariably due to, or at least accompanied by, degeneration of the blood-vessels, arteriocapillary fibrosis. The twitching is usually of the fronto-orbicularis or facial musculature, and pathogenetically it is an entirely different affection from the early or degenerative types. In short, it is usually the symptom of a well-understood pathologic condition, and the treatment which it requires, aside from that which is symptomatic, is none other than the treatment of this condition. To this form we shall not again revert. It is mentioned to give completeness to the classification.

Early tic, degenerative or acquired, may be divided into two groups: (1) Motor tic, which may be further divided into (a) localized tic, (b) generalized tic, and (2) psychomotor tic, which may also be further divided into (a) tic which is a response to a compulsory idea or obsession, (b) tic caused by coordinated movement, associated with intellectual or emotional externalization, orderly or disorderly.

¹ Read before the Section on Pediatrics of the New York Academy of Medicine, November 11, 1897.

² Dr. Landon Carter Gray of this city recently suggested the name palmus instead of tic. This term is preferable for etymologic reasons, but universal usage gives tic a great claim for its retention.

The motor tics, although in all likelihood oftentimes the expression of a similar abnormal condition as the psychomotor tics, are much less complex, but despite this fact they have been much less studied. One reason for this is that the localized varieties have usually been regarded as habit-spasms and the generalized tics as forms of chorea. The psychomotor tics, and particularly group *b*, have been rather extensively studied since Gilles de la Tourette turned his attention to them, and since it has been recognized that a condition very similar to the psychomotor tics occurs in certain parts of the world as tribal and family affections, and under other conditions as apparently the result of some toxic or infectious agent. Such, for instance, are the "jumpers" found in that portion of New England bordering Canada, Myrachit of the Siberians and Kamschatkans, and Latah of the eastern coast of Africa. The psychomotor tics, especially in this country, are, moreover, relatively uncommon when compared with the purely motor form.

Motor tic may be further subjected to topographic classification. Such a classification facilitates recognition of the condition. Thus we have (*a*) fronto-orbicular tic, (*b*) nasal and naso-orbicular tic, (*c*) facial tic, (*d*) nuchal tic, sometimes called spasmodic torticollis; (*e*) tic of the diaphragm, often called respiratory tic; (*f*) bowing tic, or *tic de salaam*, as it has been called; (*g*) string-halt tic. Further extension of this classification could be made, but this suffices to indicate the purpose and direction of such a division.

What do we know of the etiology of tic? Very little definite and positive information is to be had in response to this query. We know that tics of all kinds occur in early life, in childhood, and in early adolescence. That the disease afflicts males more commonly than females, and that the victims not infrequently have neuropathic parents and brothers and sisters who manifest other forms of nervous disease. It is known, furthermore, that occasionally the twitching follows emotion, fright, bodily and mental fatigue, and that it is often associated with somatic and psychic defects. In other words, to put it briefly, tic is frequently a possession of the superior and inferior degenerates, and it manifests itself during the formative period of the individual's character. I should fail to convey my meaning were it understood that it is my belief that tics are invariably stigmata of degeneration. The simple motor tics may occur in individuals who have nothing in their antecedents to suggest an inherent neuropathic constitution, and no bodily or mental attributes which can be called stigmata. Indeed, the simple motor tics may, I believe, be the result of many different con-

ditions which induce some change in the motor areas of the brain or in the subcortical motor stations. The immediate antecedent condition is, in all likelihood, a nutritional depravity. This harmonizes with our experiences that tic is not infrequently encountered in rachitic children, in young individuals who have acquired a rheumatic diathesis, and occasionally after acute disease.

In this connection I would like to say a word in reference to so-called habit-spasm or habit-tic. That twitching movements occur in individuals who voluntarily imitate them as an affectation, or to ridicule or tantalize others cannot be denied. Many habit movements are pure, emotional, and gesticulatory manifestations, and can by no means be considered tics. Tics may occur in individuals who have voluntarily imitated the twitching movements of others, and if such are not possessed of a stable nervous system, the tic often develops so dominantly that it cannot be controlled. Such persons are abnormal when considered from a neural standpoint. In the opinion of the writer the departure from the normal indicated by the word tic is in the majority of cases akin to that indicated by the words epilepsy or hysteria. It is unnecessary to say that epilepsy may be caused by toxic states of the blood; that it results occasionally from causes termed reflex, and that states of the nutrition have a direct traceable relationship to the frequency of the epileptic attacks. Notwithstanding this, when we speak of epilepsy in ordinary parlance, we mean epilepsy which is not associated with any of these, but which is conditioned by unknown, prenatal influences. I am, therefore, inclined to the belief that tics taken as a whole bespeak, with greater uniformity than any other one condition, a state which may be designated, at the present time, only as degenerative, using this word in its biologic and proper sense as signifying a loss or impairment of the qualities peculiar to the race or type and not in its pathologic sense as synonymous with decay. A number of nervous diseases whose pathogenesis is obscure and whose morbid anatomy is a closed book have come to be considered as degenerative neuroses, that is, symptom-complexes which have been so frequently found, statistically, to be associated with bodily and mental stigmata or departures from the normal, as to justify us in classifying them as degenerate diseases. Of these, we may take the three just mentioned and tic as exemplars. The fact that we have already found, or shall eventually find, that one or all of them is associated with definite anatomical lesions does not interfere with the conception of them as degenerative diseases. The degenerative nervous diseases by the very reason of there being have no individual causative factors, such as have

the infectious or toxic diseases of the nervous system, and unless our understanding of biology and the underlying principles of heredity be all at fault, such diseases do not stand in genetic relationship to factors operative after the complete development of the individual. The forces which determine the existence of such a disease are antecedent to the life of the individual, and they may be traced directly, indirectly, or not at all through many generations, although the exciting cause, the one which apparently determines the tic is effective only during life.

Tic itself is not inherited but the neuropathic predisposition may show itself in other almost innumerable conditions, mental or physical, indicating a departure from the normal. This is true of all the degenerative nervous diseases. If we examine what is known of the etiology of the diseases which have been enumerated as examples of nervous degenerative diseases, we will find that, although it is uncommon to discover the same disease in the immediate or remote ancestry, it is extremely frequent that some collateral or related nervous disease is found. And so it is with the tics. It is very rare to learn that a patient's parents or immediate relatives have suffered from some twitching disorder, but it is not uncommon; indeed it is the rule to find that there is some allied neurosis or psychosis in the family.

In what, may be inquired, are we justified in placing tic among the degenerative diseases? To this, our answer is, that particular investigation of the cases which have come under personal observation during the past four years, since my attention was first attracted to this view, has shown that tic is associated with somatic and psychic stigmata of degeneration in greater proportion than any other nervous disease. I have full notes of fifty-seven cases of tic, and have seen a much larger number of which I do not possess notes. On looking through the histories of these cases I find that such stigmata of degeneration were sufficiently obvious in thirty-two of them (about sixty per cent.) to call for specific notation. In others, I recall such stigmata, even though there is no note of their existence.

It would carry me beyond the self-imposed limits of this paper were I to dwell upon the variety and form which these stigmata assume. It is taken for granted that every one admits that all abnormal individuals may be divided into two great classes, *viz.*, superior and inferior degenerates, that the superior degenerates are those who, though possessed of individual qualifications to command notoriety and fame, are lacking in the possession of such mental equilibrium as prevents the term normal from being applied to them. Such often contribute to the number of names that live forever, particularly if their indi-

vidual and superior qualifications lie in the direction of externalizing emotional states, supported by, but not solidly based upon, intellectual possessions. They are the decadent artists, poets, and esthetes. The inferior degenerates, on the other hand, are a dependent class. Their intellectual possessions are all below the normal. Some of them may be but slightly so, while others may be so lacking that they are as good as absent. Naturally, this class includes the idiot and the idiot savant. It includes the individual with congenital clubfoot, the polydactylus, and the web-fingered. Although the superior degenerate is of the independent class, he not infrequently has quite as many and as striking stigmata of degeneration as has his brother, the inferior degenerate. These stigmata are, as is well known, certain definite departures from the normal, occurring with sufficient frequency to constitute types. They are both of the body and of the mind. Those of the body are much more easily detected, the more important being changes in the relative shape and contour of the extremities and their accessories from what is normal for an individual, considered as a member of a race. I say considered as members of a race or people, for what is normal in a Mongolian would be decidedly pathologic in a Caucasian, and likewise, cranial conformations habitual to the Teuton would, occurring in a Celt, constitute a decided departure from the normal.

Patients who have one of the different forms of early tic, which is not a symptom of peripheral irritation, will be found, I believe, to have some of these bodily stigmata of degeneration with sufficient frequency to justify us from this evidence alone in placing it among the degenerative diseases. They will be found to have malformations of the cranium, exemplified by too large, too small, or asymmetrically developed heads; defective lobulation, formation, and relative position of the ears; the occurrence of a Darwinian tubercle, or an absence of the helix; a deficient tragus or antitragus; change in the shape of the ocular aperture, an approximation to the circular, a tapering internal canthus, an approach to the Mongolian eye; an unduly developed, prognathous lower jaw, with an accentuation of the inferior angular process, constituting the Lamarckian hypophysis; defective conformation of the palate; an excessively vaulted arch, the development of a ridge through the center, constituting the *torus palatinus*; asymmetrical or bifid uvula; disproportionate length of the upper extremities, and particularly of the index-finger, a remnant of the prehensile finger in the early stages of evolution; undue projection of the os calcis; excessively arched feet, constituting the *pes cavus*, and a number of other defects of corporeal evolution

which have been statistically shown to be the natural possession and attribute of the degenerate. Moreover, these deficiencies are as likely to be found in the superior as in the inferior degenerate who develops tic. I have seen them conspicuously developed in an individual with tic whose ancestors contributed to the constitutional and formative history of this country, as well as in the individual devoid of sufficient mind to be cognizant of ancestors. The psychic stigmata of patients with tic are much more difficult to enumerate, principally because they are ill defined. Indeed, the mental phenomena constituting a part of the psychomotor tics may be looked upon as such stigmata. In other instances they manifest themselves by intellectual limitations, by obsessions, by pathologic intolerance of ordinary environmental conditions, and by some manifestation of defective mental balance.

Not infrequently tic patients have certain abnormal bodily conditions which are attributed as causative of the twitching movement, and which some writers have been so illogical as to contend would allow or cause cessation of the tic if remedied. I speak now particularly of ocular, including refractive, anomalies. I am very certain that patients with tic not infrequently have misshapen eyeballs which call for corrective glasses; that the musculature of their eyes is sometime badly balanced; and that other peripheral sense organs may show departures from the normal, but I am quite as firmly convinced that these are the legitimate possessions of an individual whose evolution toward the type which at this stage of the world's history is looked upon as normal has been imperfect. Moreover, as I shall say under treatment, no means should be left untried to correct these shortcomings, but their existence should not be said to be causative of another manifestation of the degenerate state. An examination of the statistics of epilepsy shows that ocular anomalies are more common in those who suffer from this disease than in normal individuals; yet no one whose opinion is of any considerable value now contends that such abnormalities of the peripheral visual apparatus are the causes of epilepsy, or that their correction has any particular influence on the course of the disease.

To recapitulate, and to summarize in a few words my conception of tic, I may say that, leaving out acquired motor tic, both the early and later varieties, it is one of the degenerate diseases; that its association with somatic and psychic stigmata of degeneration entitles it to classification in this category; that it conforms in its occurrence, in its development, in its progression, and in its attitude toward treatment with all the degenerative diseases; it occurs in the early years of life, and develops gradually; its unin-

fluenced tendency is toward progression, and it is disappointingly responsive to therapeutic measures.

The clinical phenomena of tic are so very familiar that I hesitate to attempt to depict them. I shall, however, quote very briefly the notes of a few cases illustrative of types of the disease, and particularly bearing on the topographic classification given in the beginning of this article. The most common form of simple motor tic is of some group of muscles of the face. The twitching may be limited to this locality, or may extend to involve other muscles and groups of muscles concerned in the performance of a motion requiring coordination. Such a type is well illustrated by the following case:

CASE I.—M. H., ten years old, a school-girl, was brought to my clinic at the Post-Graduate Medical School, because of the grimaces which the mother said she indulged in. The only family history bearing upon the disease was that the father had had twitching of the shoulder and of the side of the neck as long as he could remember. The child had many stigmata of degeneration, including most of those enumerated above as commonly found in the cephalic extremity. In addition, she had a considerable degree of astigmatism associated with myopia, for which she wore glasses. The twitching movements consisted of a number of sudden, rapid closures of the eyelids, with corrugation of the forehead, followed by short, rapid elevation of both corners of the mouth and distension of the nostrils. Occasionally these movements would alternate with a few rapid twitchings of the head toward the right side, while at other times these lateral movements of the head would follow the facial movements. After the child had been under observation for some time she added to her complex of movements that of spasmodic sniffing, to which was sometimes superadded a slight inspiratory sound or stridor. For a considerable time the symptoms made no response to the customary therapeutic measures. She was then given belladonna in sufficient doses to produce a pronounced effect, and this condition was maintained a fortnight. At the end of this time she was put upon sulphate of copper in large doses ($\frac{1}{2}$ gr., three times daily), and at the end of five months all manifestations of the tic had ceased, with the exception of inconsequential blinking movements. She remained away from the clinic for six months, and has recently returned with the story that the symptoms all returned after a month of attending school.

The second case, one of tic of the diaphragm, is in decided contrast to the first:

CASE II.—The patient, a girl fifteen years old, was suffering from a condition which gave her and her family almost intolerable annoyance. This symptom consisted of a sudden ejaculatory inarticulate sound which resembled "heim," if forcibly said without moving the lips, and which was repeated from eight to fifteen times per minute, and was sufficiently loud to be heard through the walls of a closed

room or throughout an entire railroad car. This case might be considered a type of barking-girl. Examination showed that there were no departures from the normal save a number of the stigmata of degeneration. The present attack, which had lasted nearly two years, was separated from the first by an interval of three years. After she had been under Dr. L. C. Dana's care for some time, he requested me to carry out certain plans of treatment, which I did. The first consisted of isolating the patient, and keeping her in a stuporous condition for a number of days, three or four weeks, indeed, with opium; no amelioration resulted. The next was to give large and gradually increasing doses of dilute hydrocyanic acid, hoping thus to blunt the terminal filaments of the phrenic and pneumogastric nerves; treatment unavailing. It was then decided to intubate the larynx, hoping, at least, to so minimize the annoying symptoms of her infirmity as to make life tolerable. If the spasmodic expiration could be robbed of its intonation by preventing the vocal cords from vibrating, it was hoped that she might become less of a "pariah." This procedure was quite as futile as its predecessors. It was then suggested that an endeavor be made to overcome the intolerable manifestation of her disease by making a suggestive appeal to the mind. She believed the seat of the trouble was in the throat. No attempt was made to deceive her; on the contrary, she was told that a serious operation would have to be performed, and that the result, if her life was spared, could only be gratifying. She was placed under ether, the throat scarified, and her neck very voluminously and stiffly bandaged; then put back to bed, provided with a nurse, and fed on liquid diet, just the same as though she had had a most serious operation. The irrepressible "heim" continued as before. She was then sent to the country, and made to live a rollicking, out-of-door life, and after a few months returned to California. Nothing more was heard from her until one day when lecturing upon a patient, similarly afflicted, at the Post-Graduate School, one of the audience volunteered the information that she had come under his care in the Occident; that he had administered sulphate of copper in large doses, and that the convulsive phenomenon had ceased while she was taking this drug. I am unable to say just how long a period she took the treatment.

The next case is one of the degenerative forms of torticollis:

CASE III.—The patient was a young woman, twenty-six years of age, who had been comparatively well until the twentieth year of her age. She was of a nervous and excitable disposition. The first manifestation of tic was a persistent sense of fatigue in the left side of her neck, which was somewhat relieved by turning the head toward the right side. This was followed after an indefinite time by intervals of twitching in the neck which turned the head quickly and convulsively toward the right side, and at the same time elevated the chin. When she was fatigued or depressed this symptom was very severe and annoying, but when she was well and in good spirits it

was more tolerable. She was treated for the first few weeks with antispasmodics and restoratives, but with very slight improvement. After this the head was suspended by the modification of the jury-mast used in the treatment of tabic patients. At first this procedure seemed to be of some avail, but its ameliorating efficacy was soon exhausted. She was then given hypodermic injections of atropin, later fluid extract of conium, and restoratives, with no gratifying result. After having been treated with galvanism for a time she sought a more propitious Mecca.

The following case is a striking example of generalized tic:

CASE IV.—The patient is a boy seventeen years old, of good family history. There were no accidents attending his birth, nor has he ever had convulsions. He did not walk until he was two years old, but this was attributed to infantile corpulency. He always had a tendency to fall. When about three years old he was taken to an orthopedic hospital because of incontinence of urine. Despite treatment this continued for a number of years. When he was five years old he was taken to another hospital on account of a tendency to fall and of an unsteadiness in standing. When eight years old he was run over by a wagon, and a fracture of the left thigh resulted. When he was eleven years old he broke the right knee-cap. During these years the unsteadiness of station was ever present. During the last two or three years he has been getting worse. When he is asked to tell what is the matter, he says "I can't walk like other people, and I cannot straighten my legs properly to walk. I am very nervous, and I can't keep still when sitting or standing. My strength is all right, but I sweat more than other boys. When I try to sit still I have to brace myself, and then my head twitches toward one side, or my face gets turned upward. When I try to stand still, my body keeps on twitching."

Examination shows a well-nourished boy who is capable of helping himself in every way and who is ordinarily dextrous. He is of splendid muscular development. When he stands both knees are somewhat flexed, the right more than the left, and while he stands, his body, particularly the trunk, is in a state of continual agitation, more twitching than rhythmic, and which impresses one of the never-ceasing change in state of muscular contraction to be observed in a person trying to balance, let us say while walking a rope. The gait is very peculiar, a flexed-knee, spastic, claw-toe gait. The trunk showing the agitation just referred to. As he walks one is reminded of the gait of a Shanghai rooster. In addition to these, there are twitching movements of the hands, not rhythmic, nor the dance movements of chorea, but similar to those he shows in the face and in the neck. If he is tired, hurried, or excited, the movements are exaggerated and his capacity for locomotion is diminished. The voice has a peculiar intonation, and there is an interruption of the rhythm of vocalization. He can articulate properly, but the intonation is jerky. There is no ataxia, no diminution of

muscular strength, and the reflexes are quite normal. When the eyes are closed, the irregular movement of the extremities and the twitching movement of the trunk are exaggerated, but they cease when he sleeps. The course of the disease has been uninfluenced by treatment, and it seems to be an elementary and progressive one.

The next case is an example of psychomotor tic:

CASE V.—The patient is now a young man twenty years old. His family history is rather peculiar. His father, although apparently sane, never took any interest in the labors and pleasures, the indulgences and anticipations which are reputed to make life worth living, even when a comparatively young man, forty-five years old, and after that lived the life of a recluse. He became neither miserly nor religious, neither paranoic nor demented; simply tolerant of his days. If he had convictions, he did not attempt to share them; if he had complaints he kept them to himself. Our patient was, so far as he remembers, a child like other children; but he was very morbid and introspective during all his youth. He says that he has always been easily fatigued, and has not had much brain power, although there are no evidences of mental shortcomings when one converses with him, even on abstruse subjects. He is of a scientific turn of mind and very inventive. When he has completed some mechanical contrivance, however, he has not the executive power to patent it, although he sees the necessity for so doing and reproaches himself for his deficiency. The complaint for which he seeks advice and aid may be best described in his own words: "I may be engrossingly engaged in work, or I may be doing nothing, when without thought or warning, I feel compelled to lift my eyes heavenward three or four or more times in rapid succession, which movement is accompanied with slight turning and elevation of the face and head. Sometimes it is necessary to do this every few minutes, and sometimes only a comparatively few times in an hour or in a day. When I am worried or perplexed, hurried or confused, it is worse. Sometimes I can resist it for a short time, but it can only be put off for a few minutes. Then I must come to it, the same as one must cough when he has a tickling in the throat. Although this movement of looking toward the sky, just over the rim of the hat is the most common one, not infrequently it alternates with a compulsory movement of looking down beyond the left elbow."

On inquiry, it is found that when he was ten years of age he had a sniffing tic for quite a long time, and afterwards had what he calls a "spasmodic grunting sound," coming from the throat. The patient is of a very peculiar disposition, a combination of excessive frankness and reticence, of confidence and distrust, of ability along certain mechanical lines, and of serious limitations along others, particularly those involving the execution of any task. Although a skilled electrician, he receives less for his labor than an ordinary workman; because of his unwillingness to assume any responsibility. These brief remarks will convey some idea of his intellectual possessions. I was not able to suggest any treatment which was

of benefit to him during the few weeks he was under my care. He was convinced that hypnotism was the remedy, and we could not agree.

The next case is an example of a variety which, fortunately, is not of common occurrence:

CASE VI.—A female child, eleven years old, of fairly good family history, save that the mother is nervous. She had an uneventful childhood, and save for a temper which was violent and which swayed her when aroused, she was of good disposition. She is a very intelligent child, and learns with ease and readiness. She has been carefully brought up and is naturally modest, and without any tendency to vulgarity. She chafes and frets under restraint and, when disciplined, and gets excited easily. Without a noticeable prodromal or developmental stage the child began to have twitchings, short and uncontrollable, of the face and shoulder. She did not seem to be cognizant of these movements, and the parents first looked upon them as an affectation. They continued, however, and became more severe until one day she upset the family equanimity by punctuating her speech with obscene, profane words, which seemed to fall from her mouth without emotion or passion, and without particular notice or comment on her part. She was not shocked nor remorseful until she was reproached, but then she was much grieved and very contrite. Notwithstanding this, the tic of the face and the coprolalia continued for some time. Under the influence of isolation, tonics, hydrotherapy, and increasing indulgence in exercise, the distressing symptoms disappeared, and so far as I know they have not recurred.

Such cases of coordinated tic with coprolalia, with echolalia, with profanity, etc., are not very uncommon. It is difficult to interpret the significance of the compulsory language in these cases. Profanity as ordinarily used is an emotional manifestation and not an intellectual one. In other words, it is a content of emotional consciousness. It is probable that the obscene words, except when they are used by depraved persons to incite sensuality, are psychologically of the same nature.

It is quite possible that the psychogenesis of coprolalia and the like is that the words constituting it have been heard on the street or elsewhere and are registered upon the auditory tablets of the brain; but they never become a part of our conscious vocabulary because they are not passed through the speech areas of the brain to the intellectual areas. Nevertheless, they may be externalized by uncontrollable forces in a way that makes their manifestation analogous to the twitching movements of tic. Indeed, the motor impulse may be a very similar one, acting however, through the entire articulatory apparatus to produce words. As a whole, coprolalia, echolalia, etc., may be considered stigmata of psychic

degeneration. Psychologically, they are rudimentary forms of speech, and in no wise comparable to intellectual word production.

CASE VII.—The last case to which I shall refer is that of a youth who is afflicted in the most distressing way. He is a superior degenerate, and has a mildly neurotic family history. The years of childhood were passed in a fairly satisfactory way, but at puberty he developed twitching movements in the cephalic extremity which turned the head abruptly and rapidly to one side, and then finished with a few short, jerky movements of the chin in the air, accompanied with sniffing. For a long time it was not suspicioned by anyone that these twitchings did not constitute all of the patient's complaint; but one evening while in the theater he blurted out in rapid succession the vulgar Latin derivative synonym of the word copulation, and thereby paralyzed that part of the audience within hearing. He afterwards told me that he had struggled against this tendency for quite a time; that the explosion had often occurred before, but until that occasion he had been able to avoid polite society when freeing himself from the unknown demoniacal grasp which seemed to be fastened upon him. This patient was likewise benefited by isolation, hydrotherapy, etc., followed by travel abroad. The twitchings have not ceased, and it is likely that they or other evidences of his neurosis will cease only with the span of life.

Taking the salient features of these cases from these brief notes of the histories and scrutinizing them, we find that the majority of the patients are entitled to the designation degenerates. Almost without exception they have the accompaniments of the degenerate state. The twitching movement, the tic, is an externalization of such degeneracy. In one case it assumes the form of an uncontrollable grimace, in another it results in a barking sound, and in another it passes through the gradations of a rhythmic-like spasm of the muscles of the trunk to a twitching of the muscles of the head and of the neck. In brief, all these forms of tic have certain general features in common, but these features merge by gradation one into another, and it is quite impossible to say what form they will take in this case or to what extent they will go in that. When we come to analyze the psychomotor tics, we at once experience great difficulty in separating them by hard and fast lines from the manifestations of other degenerate diseases. It is difficult to say just wherein they differ from the aborted types of rudimentary paranoia, from the obsessions which accompany the neurasthenic state developing in children and in early adult life, which I am inclined to believe is another manifestation of degeneracy, and from the manifold psychic compulsions and accompaniments of hysteria. But there are certain general features accompanying the tics which

one soon learns to associate with this condition and not with the degenerative disorders just mentioned. In the first place, the twitching movements themselves, if carefully studied are readily differentiated from hysteric motor manifestations. In the latter disease the motor phenomena are tremor, contracture, tonic convulsions, or flaccidity. None of these occur in tic. Above all, we must not delude ourselves into thinking that it has anything in common with chorea. That term should be restricted, except when used as a descriptive adjective, to designate an acute, humoral disease whose pathogenesis is primarily in the blood, a self-limiting disease known as Sydenham's chorea, and a hereditary chorea, dependent upon chronic parenchymatous degeneration of the cortex of the brain and known as Huntington's chorea. The tendency of many physicians to diagnose these cases as examples of chorea reminds me of the impassioned words of Charcot. On being told by a patient with generalized tic that he had been treated for chorea, Charcot exclaimed: "Chorea! And always chorea! As if that word chorea swept aside magically and majestically all difficulties of interpretation and comprehension."

With simple habit-spasms the physician has little to do unless he happens to be personally afflicted. The twitching or spasm, the result of habit, is rarely sufficiently annoying to be considered pathologic.

Occupation tic, such as "watchmaker's tic," is an occupation neurosis, and should be interpreted and treated as any other affection of this class.

The majority of the acquired motor tics are curable when their cause is discovered and removed. It is the degenerate form of which I wish to speak.

In estimating the prognosis of tic, a number of factors are to be taken into consideration. If our conception of the disease is approximately correct, then it would seem almost a contradiction to speak of tic as inimical to the life of the patient. Tic is a condition which disorders life, but does not destroy it, and when we consider the prognosis we consider in reality the chances which the patient has of ridding himself of this manifestation of developmental or evolutionary shortcomings. Like all elementary troubles the natural tendency of the tics is to progression, and it is this progression that may diminish the potentiality of health preservation. In general it may be said that the earlier the tic develops the less are the chances of its amelioration and cessation. Likewise, it may be stated that the more extensive the development and the more vital the parts in which the tic phenomenon occurs, the less are the chances of cure. In other words, it is my experience that a generalized motor-tic is almost always progressive, no matter what is done for it, and

that a tic of the diaphragm is more stubborn to treat than a tic of the face. Again, it may be said that the greater the number and the intensity of the stigmata of degeneration—in other words, the further the patient is removed from the normal, the less are the chances of assisting him to approximate normality. And, lastly, the longer the symptoms have existed, the greater is the difficulty in terminating them. Patients with tic who have psychic stigmata rarely ever become normal individuals. They may be bettered, but the mental accompaniments are every now and then likely to show their dominancy. In reality, there are few diseases in which the physician is obliged to temper his prognosis with so little assurance of recovery as in the psychomotor tics.

The treatment must be considered under two headings: (1) The treatment of the most annoying symptom, *viz.*, the twitching and its psychic accompaniment, if there be any. (2) The treatment of the neurosis, of which the main symptom is but a manifestation.

The treatment of the twitching varies according to the nature of the tic, that is, whether it be an acquired or a degenerative condition. If it be an acquired condition, the treatment is very simple, and means the removal of the cause. If it be removable, the symptom will disappear with it, although oftentimes it is necessary to utilize at the same time measures which will build up the nervous system, particularly as such simple acquired tics are commoner in neurotic subjects. Orthopedic and surgical measures have a service in the treatment of certain forms of both acquired and degenerative tic. Spasmodic torticollis is sometimes ameliorated if the patient be suspended by means of the head-piece of the apparatus constructed to suspend tabic patients, and practically the same as that used by the surgeon in applying the plaster-corset splint. It will be understood that none of these measures are curative in the degenerative forms of tic. To overcome the disease in these cases, it is necessary to go behind the symptoms and to direct treatment immediately toward the general health and the maintenance of as normal a state of health as the neural conditions with which the patient is born will allow. The necessity of putting all the bodily functions at their best is apparent to every one. This is so obvious in the treatment of all chronic and degenerative diseases that it seems trite and puerile to again refer to it; but as this is one of the diseases in which the utility of such measures is oftentimes more manifest than in its congeners, it is perhaps permissible to mention it. To accomplish this end no one measure can be successful. If the patient be a child and in school, he or she should be removed and encouraged to lead a rol-

licking outdoor life, and be given a course of tonics, while the various hydiatic and hygienic measures which may be utilized for the betterment of the health are employed. In some instances the discipline of partial isolation and the removal from parents and members of the family, particularly if the tic be associated with an emotional state, or occurs in a very nervous individual, is of considerable service.

All sources of pathologic reflexes should be investigated; the eyes, the ears, the nasopharynx, and the genital organs should be passed in review, and any deviation from the normal corrected; but the physician who sees in tic one of the manifestations of the degenerate state will not beguile himself into the belief, nor mislead others by the promise that such patching can replace the evolutionary work of centuries. He will learn to differentiate the simple tics which are symptomatic of some local departure from the normal and the degenerative tics, and shape his words and course accordingly.

Spasmodic wryneck is sometimes alleviated by the administration of large doses of fluid extract of conium, 60 drops in twenty-four hours, and by the hypodermic administration of atropin. The galvanic current applied to the side of the neck oftentimes gives relief, particularly if the condition be painful, and massage is often of real service. Stretching of the facial nerve for facial tic and resection of the spinal accessory nerve and of the posterior branches of the four upper cervical nerves has been resorted to many times. If the procedure be thoroughly done, naturally it overcomes the spasm even though the tic be of the degenerative variety.

Simple facial tic in children is oftentimes found associated with some disease of the nasopharynx, and treatment directed immediately to this condition and kept up persistently will overcome the twitching in the facial musculature. I have notes of a number of cases in which such treatment has been efficacious. The indications for treatment are as direct as they are in the treatment of what has been called watchmaker's tic, a tic of the orbicular muscles following the use of the glass which these artisans hold in the orbit. In short, the source of the twitching being removed, and the general health of the patient cared for, recovery follows.

The treatment of the neurosis of which the tic is a manifestation is practically the same as the treatment of any other degenerative condition subject to individual and selective variation. The measures to be utilized are hygienic and medicinal. The hygienic should have in view, first, the development of the body, and, second, the development of the mind, and the medicinal should find its object in increasing the potentiality of life in the cellular elements of

the higher tissues. If we recall for a moment the treatment which is most serviceable in other degenerative diseases, and if we apply the results of our ratiocination to the treatment of this disease, we will be led, I believe, to formulate certain definite rules which should guide us in the theoretic handling of tics. For instance, let us take, as examples of degenerative disorders, the diseases which were enumerated in the beginning of this article, and see what is to be learned from a consideration of their up-to-date therapy. Will anyone gainsay the statement that there is any measure in the treatment of epilepsy which approaches the employment of the bromids, and will any one deny that in order to secure their fullest efficaciousness that they must be given in doses which will produce at least slightly poisonous symptoms? One of the first tasks which the physician sets himself, when face to face with the treatment of a case of epilepsy, is to determine the largest possible dose of the drug which may be continuously administered without injury to the patient, and after he has determined it he reaches out for every means at his command to so maintain the patient's vitality that such administration may be continued without injury. This treatment of epilepsy gives the best results. It is the same with hysteria, with migraine, with chronic chorea, and, indeed, I may say it is the same with all the degenerative conditions of the nervous system, using the word degenerative here in its pathologic sense. There has yet to be discovered a drug which is as efficacious in staying or delaying the basic process of locomotor ataxia as nitrate of silver. But, in order that benefit may be derived from it, it must be given in large doses, and the patient must consent to take the chances of argyria. So, I might go on and enumerate a number of other degenerative conditions in which, in order to derive any lasting beneficial effect, it is necessary to give a drug in large doses, in short, it is necessary to poison the patient. I am a believer in the use of drugs, in the efficaciousness of drugs, and in the use of therapeutic aids which are not drugs, but more than this, I believe that when it is elected to give drugs that they should not be given half-heartedly, but with a definite object in view, and that our strife should be to secure that object or demonstrate that it is not obtainable. A consideration of the therapy of chronic diseases of the nervous system has led me to one or two well-defined convictions which I have endeavored to apply in the treatment of the tics, and which I shall take the liberty of now laying before you. I have already spoken of the necessity of giving drugs in adequate doses. Experience has taught me that for the chronic nervous diseases of the slowly progressive

order the salts of the metals are of greatest service, and that in chronic diseases conditioned through the vascular system, the vegetable poisons and their alkaloids are of similar service. In support of this statement, I would cite again the use of the bromids in epilepsy, of silver in tabes, and strychnin in tic-douloureux.

I believe that I have witnessed the efficaciousness of the sulphate of copper and of the nitrate of silver sufficiently often in cases of degenerate tic to warrant me in calling anew your attention to them, when they are given in sufficient doses and for a prolonged period. It is impossible, of course, to say how these alteratives act or what they do to influence the progress of the neurosis. If they are administered in a desultory fashion, or if they are given for a short time only and in a more or less haphazard way, their use will be very disappointing. They should never be alone relied upon to benefit the neurosis, but should be employed as adjuvants to the disciplinary, hygienic, and moral treatment which has already been referred to.

The education of children with tic should be along the same lines as that of children who have hysteria or epilepsy, and with the same object in view, *viz.*, to increase the stability of the nervous system while the nutritional state is kept as near to perfection as possible. In these diseases the moral and disciplinary treatment calls for the intelligent collusion of the physician and pedagogue. The details of such treatment must suggest themselves to every physician. All manifestations of precociousness are to be discouraged, childish coquetry, affectation, and self-indulgence should be exterminated, and the epochal periods of puberty and menstruation should be jealously guarded. As in hysteria, the cultivation of outdoor sports and plenty of refreshing sleep for children are inimical to the development of the tics. Inculcation of the precepts of self-control, generous feeling, altruistic sentiment, and intolerance of affectation, all have due influence in the disciplinary training of such a child.

In the minor forms of tic, it is sometimes possible for the patient to control the twitching, partially or completely, by an effort of the will, and they should be encouraged to do so. In the more severe forms, and in cases of generalized motor tic, the twitchings are materially lessened, or indeed they may cease, while the patient is indulging in absorbing occupation or sport. I have seen marked benefit follow the use of the bicycle. The patient with generalized tic whose history has been epitomized in this paper indulges in this form of sport to considerable advantage. The tic movements often stop entirely at such times and the longer they cease the better for the patient.

Summary.—In conclusion, I would like to repeat that I have endeavored to show that tic is, in the majority of cases, a degenerative neurosis; that its most prominent outward manifestation, *viz.*, the twitching, the one from which it takes its name, is a stigmata of degeneration, just as hemi-anesthesia is a stigmata of degeneration in hysteria; that its next most common stigmata are psychic and consist of compulsions, obsessions, and possessions; that tic occurs in individuals who have stigmata of degeneration; and that it is one of the degenerative diseases which develops early. I have not contended that all forms of tic are of the degenerative kind or the concomitant of a degenerated neurosis. On the contrary, I have desired to emphasize that simple motor tic, let us say tic of the musculature of the seventh nerve, oftentimes is a reflex condition dependent upon irritation of some of the branches of the fifth nerve, that in elderly persons it is often associated with degeneration of the blood-vessels, and that in the young it is sometimes seen with perverted states of nutrition, and that it recovers when these are overcome. Furthermore, I have reiterated that it has absolutely nothing in common with acute, humoral, Sydenham's chorea, nor with degenerative, parenchymatous, Huntington's chorea, and that the term chorea should never be thought of in connection with this disease, and finally, that tic being in a majority of instances a degenerative neurosis, it conforms in occurrence, in development, in progression, in obstinacy, and unresponsiveness to treatment with other degenerating diseases; that the form of treatment of greatest avail is like that which has been shown to be of service in the class of diseases of which it is a type; that the same principles should guide us in the treatment of tic, as in the treatment of hysteria, epilepsy, and of congenital defects in general, and that in my experience the salts of copper and silver, when given in comparatively large doses and for a prolonged time, while the bodily health and the general morale are cared for, are more efficacious in the degenerative form than other therapeutic measures.

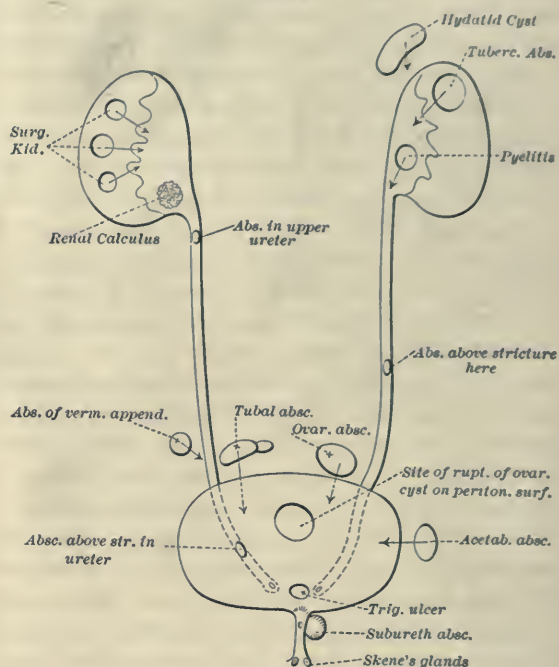
THE SOURCES AND DIAGNOSIS OF PYURIA.¹

By HOWARD A. KELLY, M.D.,
OF BALTIMORE.

If I were asked what subject of all others in the range of medicine I considered it most important to bring prominently before the profession at this juncture of the advancement of our art, I think I would reply, on the spur of the moment, pyuria. Let me emphasize the importance of my subject by saying that there are to-day thousands of women in our

country going about with a pyuria of undetermined origin; that in most instances the disease is progressive, going from bad to worse, and for this reason valuable time is being lost; and that the investigation of the source of a pyuria is not difficult to make, simply requiring some special instruments and a little practice in using them. It is my desire to speak to you briefly of the methods at our command for investigating and tracing a pyuria to its source, of determining the point at which the pus enters the

FIG. 1.



Showing a number of the sources of pyuria from the extreme lower urinary tract up to the area surrounding the kidney. The circles indicate the location of the abscess and the arrows the direction in which the abscess discharges. The character of the abscess is described on the diagram.

urine, its cause, and the extent of the involvement of the urinary tract.

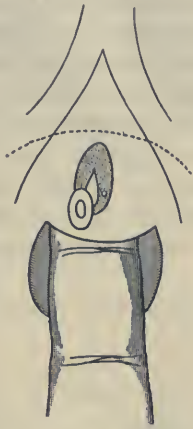
Pyuria signifies nothing more nor less than the presence of pus in the urine, a sign common to a variety of affections of the urinary passages. It is, therefore, but a symptom of an involvement of some portion of the urinary system, from the external urethral orifice up to the capsule of the kidneys.

The investigation of the cause of a pyuria must be *analytic*, taking the symptom and tracing it to its source by a process of exclusion. This is the natural procedure in the routine investigation of most diseases. Your patient comes to you with a more or less definite complaint of a disturbance along the urinary tract, often exceedingly vague, and you examine the urine and find that it contains pus, you then naturally conclude that if you can find the source of the pus you will locate the disease. While the question

¹ An address delivered at a meeting of the Southern Surgical and Gynecological Society, held at St. Louis, Mo., November 9, 10, and 11, 1897.

presents itself in this way, the means which we have hitherto had at our command for making such a determination have been generally most unsatisfactory.

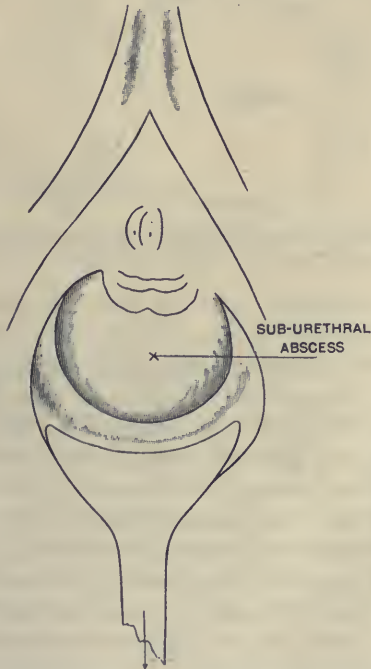
FIG. 2.



Showing the finger in the act of expressing a drop of pus from Skene's gland on the right side. The index-finger is introduced within the vagina and engaged in compressing the ureter up under the symphysis pubis, which is represented by a dotted line. The direction of the pressure is from above downward.

If an enlargement is not found in the loin suggesting a kidney containing pus, or if a point of tenderness is not found somewhere along the accessible part of the urinary tract, how is it to be determined where

FIG. 3.

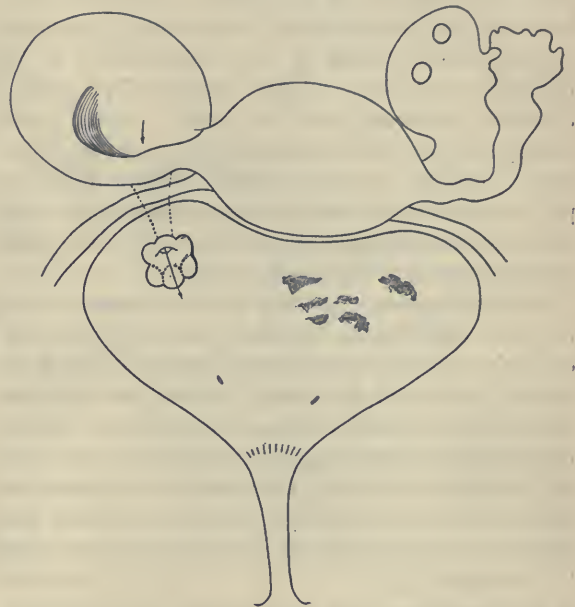


Showing the appearance of a suburethral abscess occupying the anterior wall of the vagina. The abscess is exposed by retracting the posterior vaginal wall.

the pus comes from? Moreover, the clinical signs themselves may be most misleading; for a stone in the kidney or a tuberculous kidney may give no

other sign than a vesical tenesmus; and then, too, if both kidney and bladder are inflamed, how is one to ascertain this fact and to determine the extent of the involvement of each? The question, as it stands to-day, with better means at our command, is much like the case of a man who comes to you complaining of a sore throat and purulent expectoration, and you try to determine the exact location and extent of the malady by a series of questions and by looking at the sputum, without once asking him to open his mouth, and thus looking down his throat, seeing exactly what is wrong. It is my desire, therefore, to emphasize the importance of the direct methods of

FIG. 4.



Showing the avenue of entrance of a right tubo-ovarian abscess through the base of the broad ligament into the bladder at its right horn. The vesical opening is surrounded by tits of swollen mucosa. The left side of the bladder illustrates the localized patchy appearance of a cystitis.

inquiring into the sources of pus in the urine, and I shall, for this reason, but briefly refer to the other accessory diagnostic procedures at our command.

The history of the case must be carefully considered, and the duration of the disease, the exact character and location of the pain, the frequency of urination, the existence of morbid processes elsewhere, such as phthisis, etc., must be noted. The microscopic characteristics of the urine are of the utmost importance, as the quantity of pus present, variation in the amount, the character of the pus-corpuscles themselves, the presence of blood, crystals, or cellular debris in the urine are all factors liable to afford a clue to the source of the pus.

An infection is almost always the basis of a pyuria, and this may be due to any one of the pus-producing

organisms. A scientific investigation will aim to determine which one of a large number of such organisms is present. Such a determination is not without a high degree of practical importance, as some of them exhibit a marked predilection for a special portal of entry; the gonococcus, for example, enters the urinary tract by the urethra, and the colon bacillus is more apt to be an invader from a neighboring bowel.

Pyurias may differ in the following ways: In the quantity of pus; in the reaction of the urine, which may be alkaline or acid; whether or not pus is constantly present, and whether it varies in quantity at different times. A little pus, found microscopically, associated with an irritable bladder, may mean nothing more than a hyperemia of the vesical trigonum or a ureter which is irritated by a concentrated or an intensely acid urine; a large amount of pus almost invariably proceeds from the kidney. Renal pus is usually acid, while pus from the bladder walls is often strongly alkaline; an intermittent or remittent flow of pus is most likely to come from an extravascular source, either from a kidney or an outside suppurating area communicating with the urinary tract.

In investigating a pyuria, we should always bear in mind that it may originate in one of two ways: either in a diseased condition of some portion of the urinary tract itself, or it may depend for its continuance upon a disease located outside the urinary tract and simply discharging through it as an avenue of exit from the body. The principal portals of entry for such an affection are by the pelvis of the kidney and by the bladder; in the vast majority of cases by the latter (Fig. 1).

Let us now see what we can do to clear up a diagnosis by a direct examination, which, in order that it may be complete, must pass in review the possible diseased conditions of the entire urinary tract from the external urethral orifice to the kidney, as well as the contiguous structures as far as they are accessible. I can perhaps best illustrate what I wish to inculcate by citing typical cases from my practice, proceeding in our investigation in an anatomic order from below upward.

Urethra.—To begin with, the urethra furnishes three possible sources from which pus may enter the urine: (1) Skene's ducts; (2) a urethritis or ulcer of the urethra; (3) a suburethral abscess.

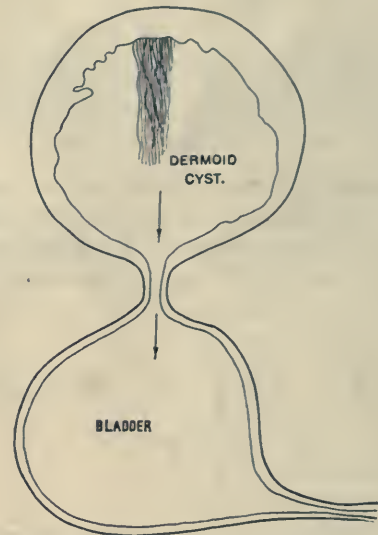
A small amount of pus, a drop or two lodged in Skene's glands, may easily escape observation unless it is made a part of the routine of every examination to milk them out by pressing first one side then the other up under the pubic arch and squeezing downward and outward. A drop of thick yellow pus may exude from the external orifice of the gland

or duct of the side from which it originates. The diagram (Fig. 2) serves to illustrate one of my cases in which this condition existed unsuspected.

A urethritis or a urethral ulcer will also afford a source of pus-contamination of the urine, which is easily detected by using a two-glass test in passing the urine; the first urine escaping brings with it the pus, and consequently that which follows will be clear. The inflamed ulcerated urethra is readily observed through the cystoscope as it is withdrawn. One of the most marked cases of this kind I ever had was due to a gonorrheal ulcer of the posterior wall near the neck of the bladder where Littre's glands are found.

A suburethral abscess (Fig. 3) is a rare but most in-

FIG. 5.



Showing a dermoid cyst adherent to the peritoneal surface of the bladder, suppurating, and discharging by a sinus into the bladder.

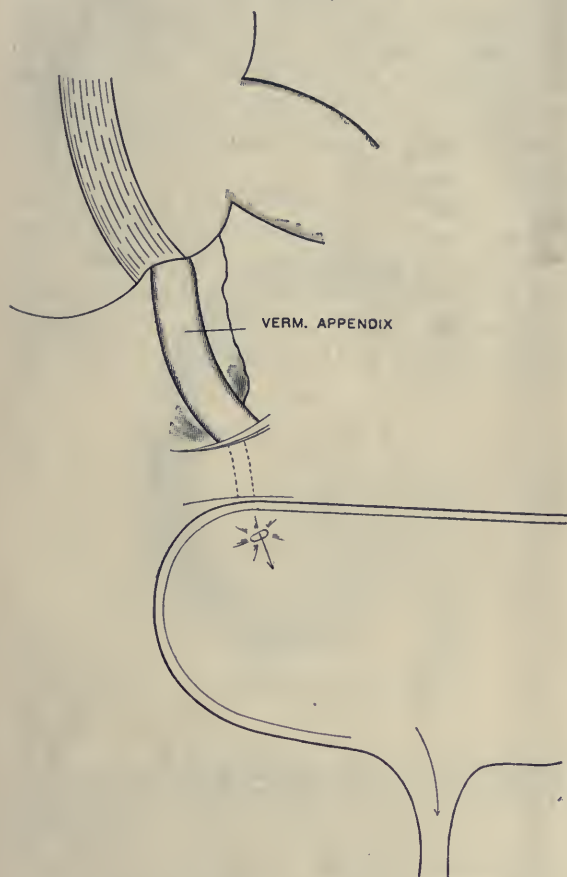
teresting condition, and one which is easily overlooked. This is the only source of urethral contamination which occasionally yields considerable quantities of pus. Two cases of this kind have passed through my hands, in both of which there was a little pouch projecting into the anterior vaginal wall, which was not otherwise altered in appearance. This pouch was full of pus, and communicated by a slit with the posterior wall of the urethra, into which it intermittently discharged a teaspoonful or more of pus. Through the urethroscope I could see the slit and introduce a probe which could be felt in the bottom of the sac.

Bladder.—The vesical sources of pyuria are three in number: (1) cystitis and trigonitis; (2) foreign body, and (3) ulcer.

All of these various affections may readily be diagnosed by examining the bladder through a simple

cylindrical cystoscope, with the patient in the knee-chest posture, under which condition the bladder becomes distended with air. A small electric head-light or an electric light is held close to the sacrum and the rays reflected by an ordinary head-mirror into the bladder, when this viscus may easily be examined. I wish to call particular attention to the fact that it is important in order that the base of the bladder may be satisfactorily inspected to let air into the

FIG. 6.



Showing an abscess of the vermiform appendix discharging by a fistulous orifice into the bladder.

vagina before dilating the bladder. This brings the floor of the bladder almost into the plane of vision, and makes the trigonum easily accessible. Ulcers are most apt to be found here, and an inflammation localized in this neighborhood—a trigonitis—is the commonest form of localized cystitis.

Extravesical Sources of Pyuria.—There are several extravesical sources of pyuria, the commonest being those connected with inflammatory diseases of the Fallopian tubes, of which I have observed a number of instances. In one of my cases (Fig. 4) a small tuberculous abscess broke into the right horn of the bladder near the base of the broad ligament, while all the rest of the urinary tract remained un-

affected. I discovered its presence by means of the red mammillated edematous mucosa surrounding the concealed opening, from which, during examination, a bubble of air escaped, and when I introduced a

FIG. 7.



Showing a carcinomatous fistula at the base of the bladder surrounded by secondary nodules.

searcher at this point its withdrawal was followed by the escape of pus. A rarer avenue of entrance is by the adhesion of a suppurating tumor to the free peritoneal surface of the bladder, subsequent to which perforation occurs. A case of this kind came into my hands a year ago through her brother, a prominent physician in New York State. The diagnosis of a tuberculous kidney had been made, but I was able to at once relieve the extensive pyuria by removing a dermoid cyst attached to the vault of the bladder and dissecting out and closing by suture the long sinus of communication between the tumor and the bladder (Fig. 5).

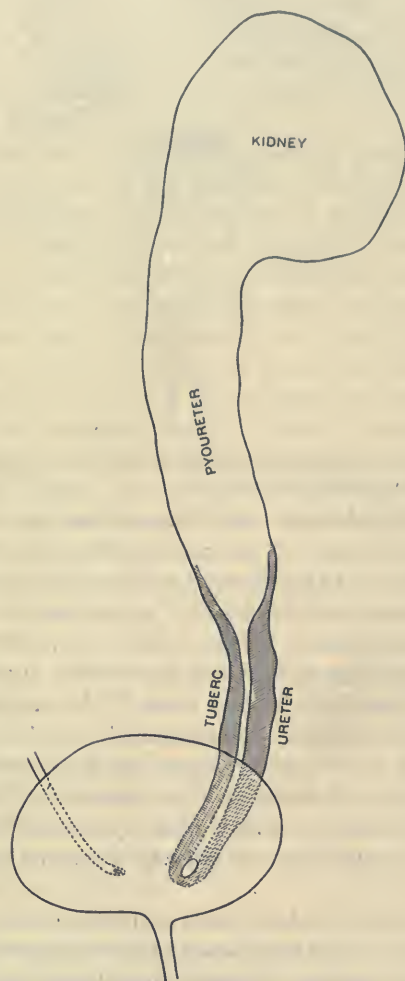
Let me also illustrate these extravescical sources of pyuria by citing a brief history of the following case in which the cause operated from the vagina: My patient had an atresia of the vagina. I found embedded in the perivaginal tissues the stem of a hard-rubber stem-cup pessary, the cup of which lay concealed in the upper part of the vagina above the atresia, where it had eroded a little opening into the base of the bladder through which a quantity of fetid pus was constantly discharged with the urine.

I shall not pause longer to dwell upon examples of abscess originating in extra-uterine pregnancy, or acetabular, or psoas-abscess, or an abscess from the vermiform appendix, also emptying in this way (Fig. 6), or the intense cystitis evoked by an intestinal fistula, or a carcinoma extending from the uterus.

The Ureters.—If a direct examination and analysis of the evidence presented does not reveal a source of the pus in the lower urinary tract, the whole upper urinary tract still remains to be investigated. May the source, and often the nature of a pyuria originating

in a ureter, pelvis of the kidney, or the kidney itself, be easily determined? This may be accomplished with facility in two ways, both of which depend upon

FIG. 8.



Showing a tuberculous strictured left ureter with a pyo-ureter and pyelonephrosis above the stricture.

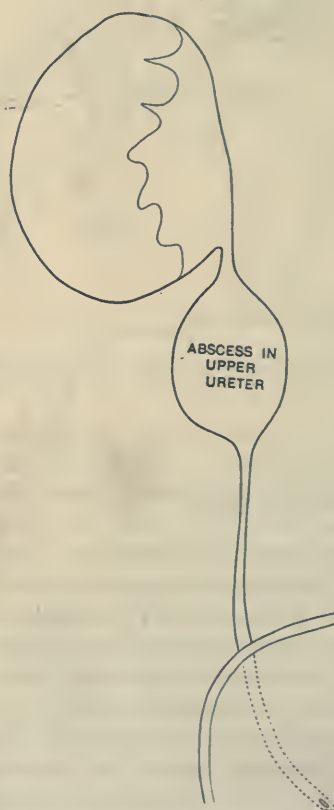
the fact that the turning of the vesical speculum about thirty degrees to the right or to the left, and dropping the handle so as to bring the floor of the bladder into view, will readily afford a good view of a ureteral orifice.

Too much has been said about the difficulty of doing this. It is not difficult; it only requires practice. I have just said that there are two ways of locating the source of a pyuria above the bladder. When an abscess breaks through into this viscus from any of the extravescical sources just pointed out the opening through which it discharges is always plainly indicated by an area of intense congestion; in like manner, when the pus comes down one of the ureters into the bladder, in many instances, the ureteral orifice of that side is intensely reddened, mammillated,

or even ulcerated. The second way consists in determining at just what point in the upper urinary tract the infection is located, by passing ureteral or renal catheters so as to investigate the entire length of the ureter and the pelvis of the kidney. I have located in this way the source of a pyuria in a pyo-ureter due to a gonorrheal stricture at its vesical end, and when I succeeded in passing a metal catheter through the tortuous stricture 150 cubic centimeters of pus at once escaped. I have located the infection in a tuberculous pyo-ureter where the pus had accumulated above a stricture near the brim of the pelvis (Fig. 8). I located another in a pocket above a stricture in the upper third of the ureter (Fig. 9) and the patient recovered after its evacuation and the dilatation of the stricture.

Renal Pyuria.—Finally, we have to distinguish, in the absence of any source of contamination below, those pyurias (a large group) which have their origin in the pelvis of the kidney, usually associated with an obstruction at the renal opening of the ureter, causing the pus to dam up in considerable quantities.

FIG. 9.



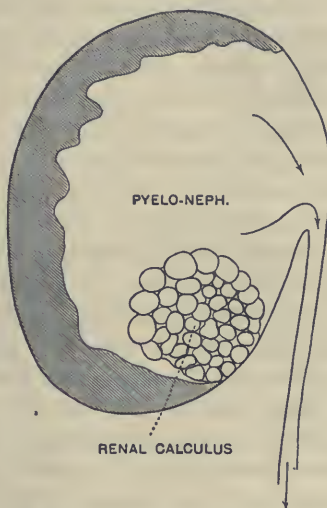
Showing an abscess in the upper part of the ureter just below the pelvis of the kidney.

This obstruction may be due to a catarrhal puffy mucosa of the renal pelvis, or to an oblique entrance of the ureter into the pelvis causing its compression as

the latter distends, or to a rotation of the kidney, which twists the ureter, or to the obstruction caused by a stone or a new growth which plugs the orifice, or to the fact that the pus is too thick to readily escape down the small ureteral channel. The source of the pus may be readily distinguished by passing a long renal catheter, which enters the pelvis of the kidney and permits of its slow escape. If the pus is too thick to run out of the narrow lumen of the catheter, it may be sufficiently thinned by injecting some boric-acid solution, and in some cases even assisting the mixture of the fluids by manipulating a large kidney between two hands. By repeated washings in this way all the pus will be evacuated.

The nature of a pyelitis of this sort must be determined by a bacteriologic examination of the pus,

FIG. 10.



Showing a pyelonephrosis with compression and thinning out of the renal substance due to the presence of a renal calculus. The ureter enters the kidney at an acute angle as often found in simple pyelonephrosis.

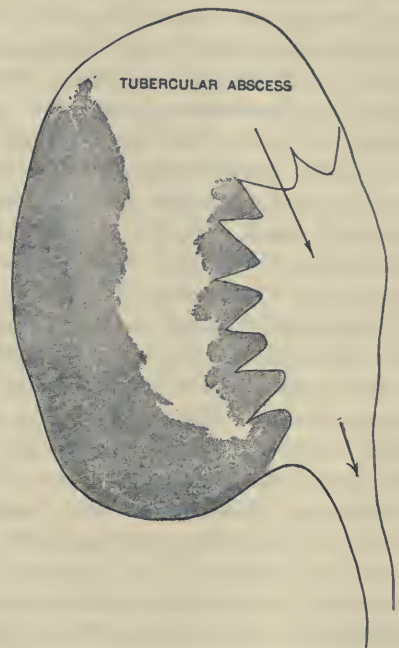
by an investigation of the history to determine whether the patient has had any previous hydronephrosis, and by a further examination to detect the presence of a calculus. I find that some cases of intermittent pyonephrosis are due to the unsuspected existence of a hydronephrosis of a low grade, the pelvis of the kidney containing at the utmost not more than from ten to twenty cubic centimeters of fluid. Following some undetermined cause or an attack of grip, or other depressing illness, the patient has a chill followed by high fever and general aching with more or less pain in the loins, associated with the appearance of pus in the urine. After washing out the kidney the symptoms all subside, but a simple hydronephrosis remains.

When there is a stone in the kidney (Fig. 10) the use of the catheter may bring down a little black *débris* which sinks to the bottom of the vessel, and should

always be looked for. A bit of the stone may stick in the eye of the catheter, or best of all, if the end of the catheter is coated with a mixture of dental wax and olive oil, the soft polished surface of the wax will be scratched by contact with the stone, and the scratch marks may be seen by examining the wax with a low-power lens.

Other sources of pus in the urine are from tuberculous (Fig. 11) or other abscesses of the kidney substance itself, discharging into the pelvis of this organ and thus into the ureter. When tubercle bacilli are found in urine taken from the upper urinary tract, it almost always indicates a tuberculous affection of the

FIG. 11.



Showing a tubercular abscess discharging into the pelvis of the kidney, the shaded area showing the sound portion of the kidney.

renal substance. In rare instances a perinephric abscess, such as a suppurating hydatid cyst, breaks through into the renal pelvis, and so finds its exit from the body through the urethra. In all cases of renal origin the diagnosis will be made, and in some the exact cause determined, by using the ureteral catheters as recommended.

SPYROCOLON AND SYPHILIS IN GREECE.

By ACHILLES ROSE, M.D.,
OF NEW YORK.

No country in all Europe is less afflicted with syphilis than Greece. The reasons for this remarkable fact are the following:

1. The majority of the population, namely, 55.27 per cent., are peasants.
2. Houses of prostitution, except in some but by no means in all cities, do not exist. This is the

more honorable to the Greeks of to-day when one recalls the ancient cult of Aphrodite Pandemos. Even Athens was without a brothel until the French introduced their morals, or lack of morals, during the blockade of the Piræus at the time of the Crimean War (1854-1857).

3. The restricted communication between many districts with large cities or foreign lands.

4. The strict morals of the majority of the population. All witnesses agree that chastity is law in Greece. The bitter enemies of this country cannot deny that Greek women are virtuous women; that women are nowhere more highly respected.

All that we know about syphilis in Greece at a period previous to our century, is that this disease was comparatively common in the principal Ionian Islands and in Crete, where houses of prostitution existed and where morals were somewhat more lax. It appears that in the cities and maritime stations where, toward the end of the last century, navigation and commerce had developed to a greater extent, and from which places many Greeks visited Western Europe, syphilis was more frequently met with. But in addition to this appearance of the disease, which can easily be explained, there occurred in Continental Greece and in the Peloponnesus, at a time which cannot exactly be stated, one or more formidable invasions of syphilis, or rather of *spyrocolon* *scerlievo*. Since a part of Greece has regained her independence several villages of Acarnania, of Æbolia, of Phthiotis; and of Bœotia of Continental Greece, and of Messinia in the Peloponnesus have also had such invasions.

According to information from physicians of a preceding generation, there can be no doubt that these invasions came from Albany. This statement is confirmed by the fact that the disease showed itself more frequently, in some parts almost exclusively, among Albanians, and among Valachian nomads or others who had intimate relations with the Albanians. It has been established that in Acarnania and Eurytania, where the occurrence of the disease had been very rare before the War of Independence, it was introduced by Albanian troops, and that it likewise made its appearance in Aetolia and Acarnania, to which places several Albanian families had migrated.

During the year 1841 Dr. Carl Wibmer, physician to King Otto of Greece, published his observations on *spyrocolon*, a new disease, which made its appearance in the northern part of Greece about 1821 or 1826. This disease showed itself first in the province of Bœotia, and in the Baltos, and later on in almost all of the other provinces of the northern part of the new kingdom. While there existed a few

cases only, the few physicians who at that time lived in Greece did not pay much attention to it; neither did the inhabitants. The symptoms resembled those of syphilis and lepra. Only later on, when it began to spread rapidly, did physicians and sanitary officers become alarmed. For the greater part they diagnosticated it as syphilis, or a yet undefined form of lepra. The inhabitants called it *spyrocolon*, or *orchida*. Dr. Wibmer was of the opinion that it was the same disease which the Italians called *scerlievo*, the Scandinavians *radesyge*. Wibmer and Kalogeropoulo describe the symptoms as follows:

“Generally the disease begins with an attack of vertigo, which in some cases is so violent that the patient drops down; in some cases there is an initial chill. Occasionally there occurs, instead of the vertigo, or associated with it, severe headache. After headache and vertigo have persisted for days, weeks, or even months, the headache ceases, and suddenly pains in the arms, legs, especially in the ulna, finger-joints, and also, in some instances, in the back and in the shoulders make their appearance. Within a few days the pains extend over all parts of the body, especially in the joints. They become aggravated during the evening and night. Sometimes they are not preceded by headache and vertigo. These pains in the bones and joints last, as a rule, weeks or months. The periosteum becomes swollen. After this condition has lasted a longer or shorter time, there appear suddenly upon the skin at different parts of the body, especially on parts covered with hair, often at different regions simultaneously, round, unequal, copper-colored pustules, resembling those of smallpox. They secrete offensive pus, and change, after a few days, into red, psoriasis-like scales. Having fallen off, they leave dark brown marks. In some instances there is no suppuration; the skin only shows tiny red nodules. After some weeks there are noticed round, large ulcerations with a whitish base in the mouth, on the lips, palate, tongue, in the nasal cavities, and on the genital organs, and condylomata around the anus. As soon as these make their appearance, the pains in the bones and joints, as a rule, become less, or disappear altogether. At this time the voice undergoes a change and becomes hoarse to such a degree that patients cannot make themselves understood. Some also suffer from dyspnea. The digestive organs do not seem to be involved. In women the catamenia discontinue from the beginning of the attack. In the course of years, while the disease lasts, the ulcers spread and cause considerable destruction; then the skin becomes covered with reddish scales, and the patients present a swollen, demented appearance. The periosteum swells, the dyspnea becomes aggravated, and at last the disease

ends with the development of tabes. The most constant of these symptoms is the progressing hoarseness. In some cases it is the only symptom noticed, while in some exceptional instances, however, it may be wanting. No age or condition of life is exempt from attack. Antisyphilitic treatment will control the disease within some weeks or months. Hoarseness is generally the symptom which lasts the longest."

During the endemic which existed at the time of the War of Independence, the symptoms were indeed grave, and this can easily be explained. We know from history how the Greeks at that time suffered for want of food, and how poor the quality of the food was. The disease made its appearance without warning. Physicians were few, and in most cases patients received no treatment.

The above described irregularity in the succession of symptoms, and some other differences or apparent differences from typical syphilis, which were observed in places where the disease reached its height, have given rise to doubts as to whether it was really syphilis or some other affection. Crosinis and Pallis insisted upon the syphilitic character of *spirocolon*. Dr. Albanarius has written an exhaustive treatise on the subject. He was for some years director of the Hospital of the *Spyrocolics*, at Calamas.

During 1847 special hospitals for sufferers from the disease were opened in Acarnania, Phthiotis, Parnassidis, Boeotia, Achaia, and later on, at Calamas. A law was passed compelling the segregation in these hospitals of all persons afflicted, thanks to which measure the disease became extinct. Aside from this endemic appearance of syphilis or *spirocolon* in the rural regions, real, unmistakable syphilis appeared in the cities. Then it was met with elsewhere, principally in the Ionian Islands, especially Zante and Corfu, and in Athens, Piræus, Hermopolis, Nauplia, Lamia, Patras, and Calamas. It was also frequently encountered in certain islands where the inhabitants were sailors, especially Hydra and Spetsa, while in other islands, inhabited also by sailors, very few cases were known to exist. In the agricole islands of the Archipelagos, in the greater part of Eubœa, in the different places of Mantinea and in Megara, the disease is almost unknown. With the development of syphilis in different cities, which has taken place since a part of Greece became independent, the disease was transmitted to other localities where it had not before existed. On the other hand, it disappeared from the rural districts, and even from some cities where it had been introduced during the war.

RAPID DISINFECTION WITH HIGH PERCENTAGES OF FORMALDEHYD; RESEARCHES CONDUCTED AT THE HYGIENIC LABORATORY OF THE UNITED STATES MARINE HOSPITAL SERVICE.

BY EZRA KIMBALL SPRAGUE, M.D.;
PASSED-ASSISTANT SURGEON UNITED STATES MARINE HOSPITAL SERVICE.

IN recent years, when we have learned to place a proper estimate upon the value of disinfection as a means of preventing the introduction and spread of infectious diseases, there has arisen a demand for an agent which, without injury to fabrics, will promptly destroy the most resistant pathogenic organisms. The ruinous effects of steam, mercuric chlorid, carbolic acid, and sulphur dioxide upon certain articles are too well known to require comment. But in formaldehyd we have at last found an efficient disinfectant which, according to the results of experiments, seems to be practically non-injurious.

Dr. J. J. Kinyoun, Passed-Assistant Surgeon, Marine Hospital Service, says in *Public Health Report*, January 29, 1897, "At this juncture it might be well to remark upon the effects of formaldehyd gas and its solutions upon textile fabrics, hair, fur, and leather. Experiments were made by subjecting samples of wool, cotton, fur, and leather goods, to crucial tests, using solutions of various strengths, and also a saturated atmosphere of the gas. The results obtained were in every way satisfactory. Of over 225 different samples of wool, silk, cotton, linen, leather, and hair, employed in the tests, there was no change observed in textile character, even when they were soaked in a strong solution of the gas. Little, if any, change occurred in the colors of the fabrics, only three of the number showing any change whatsoever—two shades of violet, and a light red. The affected colors were a product of coal-tar, and were also quickly bleached by the sun."

From the above there can be no doubt that we now have in formaldehyd a disinfectant which may be used upon all articles without injury thereto. Hitherto, most of the experiments with formaldehyd have been made with a small percentage of the gas, and with a long exposure, twelve to forty-eight hours. There can be no question regarding its efficiency when thus employed, but its field of usefulness would be greatly limited were the minimum time of exposure to be twelve hours. The fact that no apparatus had been constructed on a plan such that a high percentage of gas could be secured and maintained compelled the employment of relatively small quantities. With the Kinyoun-Francis formaldehyd disinfector, manufactured by the Kensington Engine Works, Philadelphia, it is possible to

make use of as high a percentage as may be desired, and the chamber being air tight, the quantity of gas is not decreased during the time of exposure.

It has been urged against formaldehyd that in practical application its effects are uncertain, because the percentage of gas generated cannot at all times be accurately determined. This objection holds good against all other generating apparatus with which the writer has had experience, because of an inherent inability to so regulate the heat that formaldehyd alone is generated without the production of comparatively inert polymeric forms; but with a thirty-per-cent. solution of calcium chlorid in formalin, heated by a steam coil, these polymers are not produced, and consequently with an apparatus thus equipped this objection is removed, and the percentage of gas generated can be calculated with mathematic certainty.

The Kinyoun-Francis apparatus consists of a disinfecting chamber, a boiler-iron cylinder without a jacket, with a capacity of 1090 liters. To the cylinder is attached a vacuum apparatus, a formaldehyd generator, and an ammonia generator. The cylinder is also fitted with a rack in which the various articles for disinfection are placed. The formaldehyd and ammonia generators are attached at the middle of one side of the cylinder and, although distinct, are covered with a Russia-iron jacket, which would conceal their identity were it not for the fact that to each is attached a brass plate, one marked "Formalin" and the other "Ammonia." The formaldehyd generator is a copper boiler, containing a copper coil, and its capacity is 3.21 liters. The ammonia generator is of the same construction and capacity, with the exception that the copper is replaced by iron. The coils are connected with a steam boiler, and the generators communicate with the disinfecting-chamber by means of small pipes which are fitted with the proper stop-cocks.

The articles to be disinfected are placed in the rack or car which is rolled into the chamber, the door is closed and secured, and a vacuum of fifteen to twenty inches obtained. The formaldehyd generator having been previously supplied with 200 cubic centimeters of a thirty-per-cent. solution of calcium chlorid in formalin, steam is turned into the coil, and, by means of a gage, the pressure of formaldehyd is recorded in atmospheres. By comparing the capacity of the generator thus filled (2.71 liters) with the capacity of the chamber (1088.72 liters) we find that it corresponds very closely to 1-400. Consequently, with a pressure of twenty atmospheres of formaldehyd in the generator, if the gas is turned into the disinfecting-chamber we will have very nearly five per cent. formalde-

hyd therein. Working, as we did, upon the above basis, forty atmospheres equaled ten per cent. in the chamber, and eighty atmospheres, twenty per cent. The percentage of formaldehyd having been decided upon, the gas is turned into the chamber and allowed to remain in contact with the various articles contained the desired length of time, at the end of which the vacuum is opened and the air rushes in. This mixture of air and formaldehyd is then exhausted, and the ammonia generator, previously supplied with about 500 cubic centimeters of aqua ammonia, is operated in the same manner as already described for formaldehyd. The latter having been in a great measure removed with the air, one to two per cent. of ammonia will neutralize the residue. Air is again allowed to enter the chamber and the door may now be opened. It is usually found that there is a slight excess of ammonia, but not enough to cause any annoyance. In order to test the efficiency of the apparatus sterile cover-slips were respectively smeared with a drop of bouillon culture of anthrax, diphtheria, and typhoid bacilli. These slips were dried, wrapped in sterile lens paper, the package being then placed in a sterile envelope and marked. Plate-cultures of the same organisms were also prepared in order to show the effect of formaldehyd on both dry and moist bacteria. Before exposure the envelopes were cut open to permit access of the disinfecting-agent. One set of slips was placed free in the chamber, one between the leaves of a large book, one buried in a cotton mattress, one in a hair pillow, one in a feather pillow, and still another was tied up in a bundle of letters. The last was sealed in a non-perforated envelope. The covers of the plate-cultures were removed and two thicknesses of sterile cheese-cloth tied over the top, after which a set of them was placed in the mattress and in each of the pillows.

EXPERIMENT 1.

Exposures were made as follows:

- 5 per cent. formaldehyd, 15 minutes.
- 5 per cent. formaldehyd, 60 minutes.
- 10 per cent. formaldehyd, 30 minutes.
- 10 per cent. formaldehyd, 60 minutes.
- 20 per cent. formaldehyd, 30 minutes.
- 20 per cent. formaldehyd, 60 minutes.

The first exposure of fifteen minutes with five per cent. formaldehyd may be dismissed with a few words. It was the first time the apparatus was used, and only thirty-eight cubic centimeters of the formalin and calcium-chlorid mixtures was placed in the generator.¹ Mechanically the trial was successful, and the

¹ Note. This experiment is of practical interest because it confirms the truth of the estimate that a pressure of twenty atmospheres in the formaldehyd generator will fill five per cent. of the space in the chamber. By the rule of three it is readily seen that if one liter of formalin will generate 1425 liters of gas, thirty-eight cubic centimeters of formalin should generate fifty-four liters or five per cent. of the capacity of the chamber.

five per cent. of formaldehyd was generated, the gauge showing a pressure of twenty atmospheres before the gas was turned into the chamber, but the organisms were not killed in a single instance. In the succeeding experiments a larger quantity of formalin was placed in the generator, and the volume of gas estimated from the pressure. Proceeding in this manner only two charges were required for the entire work.

EXPERIMENT II.

Percentage of formaldehyd, 5; time, 1 hour.

(A) Cultures on Petri dishes covered with two thicknesses of cheese-cloth:

1. Cultures buried in hair pillow:

Anthrax.....	growth
Diphtheria.....	no growth
Typhoid.....	no growth

2. Cultures buried in cotton mattress:

Anthrax.....	growth
Diphtheria.....	growth
Typhoid.....	growth

3. Cultures buried in feather pillow:

Anthrax.....	growth
Diphtheria.....	no growth
Typhoid.....	growth

(B) Cultures dried on cover-slips and wrapped in lens paper: growth under all conditions.

EXPERIMENT III.

Percentage of formaldehyd, 10; time, 30 minutes.

(A) Cultures on Petri dishes covered with two thicknesses of cheese-cloth:

1. Cultures buried in hair pillow:

Anthrax.....	growth
Diphtheria.....	no growth
Typhoid.....	growth

2. Cultures buried in feather pillow:

Anthrax.....	growth
Diphtheria.....	growth
Typhoid.....	growth

(B) Cultures dried on cover-slips and wrapped in lens paper: growth under all conditions.

EXPERIMENT IV.

Percentage of formaldehyd, 10; time, 60 minutes.

(A) Cultures on Petri dishes covered with two thicknesses of cheese-cloth:

1. Cultures buried in cotton mattress:

Anthrax.....	growth
Diphtheria.....	no growth
Typhoid.....	no growth

2. Cultures buried in hair pillow:

Anthrax.....	growth
Diphtheria.....	growth
Typhoid.....	growth

3. Cultures buried in feather pillow:

Anthrax.....	growth
Diphtheria.....	growth
Typhoid.....	growth

(B) Cultures dried on cover-slips and wrapped in lens paper: growth under all circumstances.

EXPERIMENT V.

Percentage of formaldehyd, 20; time, 30 minutes.

(A) Cultures on Petri dishes covered with two thicknesses of cheese-cloth:

1. Cultures buried in cotton mattress:

Anthrax.....	growth
Diphtheria.....	no growth

2. Cultures buried in hair pillows:

Anthrax.....	no growth
Diphtheria.....	no growth
Typhoid.....	growth

3. Cultures buried in feather pillow:

Anthrax.....	growth
Diphtheria.....	growth
Typhoid.....	growth

(B) Cultures dried on cover-slips and wrapped in lens paper:

1. Cultures free in chamber:

Anthrax.....	no growth
Diphtheria.....	no growth
Typhoid.....	no growth

2. Cultures between leaves of book:

Anthrax.....	no growth
Diphtheria.....	growth
Typhoid.....	growth

3. Cultures buried in cotton mattress:

Anthrax.....	no growth
Diphtheria.....	no growth
Typhoid.....	no growth

4. Cultures buried in hair pillow:

Anthrax.....	growth
Diphtheria.....	no growth
Typhoid.....	no growth

5. Cultures buried in feather pillow:

Anthrax.....	no growth
Diphtheria.....	no growth
Typhoid.....	no growth

EXPERIMENT VI.

Percentage of formaldehyd, 20; time, 60 minutes.

(A) Cultures on Petri dishes covered with two thicknesses of cheese-cloth:

1. Cultures buried in cotton mattress:

Anthrax.....	growth
Diphtheria.....	no growth
Typhoid.....	no growth

2. Cultures buried in hair mattress:

Anthrax.....	no growth
Diphtheria.....	no growth

3. Cultures buried in feather pillow:

Anthrax.....	growth
Diphtheria.....	growth
Typhoid.....	growth

(B) Cultures dried on cover-glasses and wrapped in lens paper:

1. Cultures free in chamber:

Anthrax.....	no growth
Diphtheria.....	no growth

2. Cultures between leaves of book:

Anthrax.....	no growth
Diphtheria.....	no growth
Typhoid.....	no growth

3. Cultures buried in cotton mattress:

Anthrax.....	growth
Diphtheria.....	growth
Typhoid.....	no growth

4. Cultures buried in hair pillows:

Anthrax.....	no growth
Diphtheria.....	no growth
Typhoid.....	no growth

5. Cultures buried in feather pillows:

Anthrax.....	growth
Typhoid.....	no growth

In each experiment a package of letters, in the center of which was placed dried cultures in sealed envelopes, was securely tied and thrown into the rack. Growth occurred in all cases. In all probability, if the packages had been perforated they would have been disinfected in some instances, but the trials were made with sealed letters for the express purpose of ascertaining whether or not it were possible to avoid mutilating them with a punch.

The above experiments were performed by direction of Surgeon-General Wyman of the Marine Hospital Service, and were conducted under such conditions as would obtain at a well-equipped quarantine station. While surface disinfection was accomplished with twenty per cent. of gas after thirty-minutes' exposure, as well as after one hour, the results in the interior of the mattress and pillows were not entirely satisfactory. The destruction of the organisms between the leaves of a large book after one-hour's exposure demonstrates that formaldehyd turned into a vacuum chamber possesses no considerable power of penetration.

We know of no one, heretofore, who has claimed that disinfection with formaldehyd could be secured in less than four hours. But even that is too long a time to render its use practical at a quarantine station, where results must be obtained with the least possible delay.

At the National Quarantine Stations formaldehyd lamps are now in practical use for the disinfection of cabins, forecastles, etc. In the recent epidemic of yellow fever, disinfection of mails, baggage, and freight has regularly been performed with formalin generators or lamps, and with the best results. They have also been used at the detention camps established at Fontainebleau, Mississippi, Mount Vernon Barracks, Alabama, Camp Hutton, and other points. As rapidly as possible, all the quarantine stations under the control of the Marine Hospital Service are being equipped with the most approved and complete appliances for the use of formaldehyd in in-

stances where it would be preferable to other methods.

While the specific time for exposure in vacuum with twenty per cent. of gas is one hour, and for the present it will not be lessened, the foregoing experiments demonstrate that the disinfection of clothing and articles of like nature can be accomplished in thirty minutes. It is not improbable that with higher percentages better results will be obtained, and in a future article it is intended to give the results of further experimentation; but enough data have already been given to prove that with formaldehyd rapid and efficient disinfection may be secured, and that, without injury to the most delicate fabrics.

CLINICAL LECTURE.

HEMORRHAGIC INFARCTION OF THE LUNGS; SUDDEN DEATH FROM HEART DISEASE.¹

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Hemorrhagic Infarction of the Lungs is a circumscribed pulmonary apoplexy due to embolism. Though it may occur in several ways it usually results from the plugging of a branch of the pulmonary artery by an embolus, which is followed by diapedesis or transudation of blood into the parts formerly supplied by the obstructed arterial twig. More rarely it is due to rupture of a branch of the pulmonary artery from intense hyperemia around the obstruction and subsequent fatty degeneration of the vessel. According to Rindfleisch, in such cases the blood finds its way into the air-cells and bronchi in the vicinity, rapidly coagulates, and the process ceases. In some cases no cause of the infarction can be discovered, as all traces of an embolus have disappeared.

When a twig of the pulmonary artery is completely occluded by an embolus, the parts beyond the obstruction, *viz.*, the air-cells, bronchioles, and interstitial tissue, become the seat of hemorrhagic infarction. Cohnheim says that, "this is accomplished by the arterial blood being forced backward or regurgitated from the capillaries of the pulmonary veins into the excommunicated capillaries of the obstructed twig of the pulmonary artery." As a rule, the latter do not rupture, but permit a diapedesis or transudation of blood-elements through their walls, which are abnormally permeable owing to the fact that their integrity has been impaired by embolism. It is also probable that they allow leakage of arterial blood more readily than venous blood, on account of their being accustomed to the latter. Formerly it was thought that infarction in these cases is invariably due to rupture of the capillaries from intense hyperemia alone, as might occur in mitral disease, without taking into account the embolus. This,

¹ A clinical lecture delivered at the New York Polyclinic Medical School and Hospital.

however, does not explain why the infarction is limited to such sharply defined areas, sometimes to a single lobule. The true explanation is as follows:

Sooner or later, in diseases of the heart, there occurs dilatation of the right ventricle as a result of mitral obstruction or regurgitation. In the beginning it is dilated hypertrophy, but later the dilatation becomes prominent and, not being properly compensated by hypertrophy, the blood-current becomes sluggish. In such a condition thrombi or venous clots may form in the right heart, especially in the muscoli pectinati of the right auricular appendix, or between the columnæ carneæ of the right ventricle near the apex. Emboli become detached from these thrombi and cause infarctions in the lungs by their direct transmission along the pulmonary artery. Besides originating in the right heart from dilatation, emboli may enter the systemic venous circulation from any part of the body, and produce infarction in the lungs after passing through the right-heart. Emboli may also enter through the superior vena cava into the right side of the heart as a result of fractures or other severe injuries of the skull affecting the diploe.

As occasionally happens in typhoid or other fevers, emboli may become detached from thrombi formed in any of the peripheral veins, or in thrombosis of the uterine or ovarian veins, and even of the iliac or renal veins from pressure caused by large uterine fibroids and other tumors. If the emboli are septic, metastatic abscess, instead of infarction, usually occurs, or rapidly follows the latter. Emboli which originate in the portal circulation are apt to produce infarctions of the liver; those which originate in the lungs or left side of the heart affect the brain, spleen, or kidneys.

Hemorrhagic infarction may involve but a single lobule, or several infarctions may occur simultaneously in one or both lungs. They are more commonly found at the periphery than in the interior of the lung, because of the fact that the pulmonary artery and its branches become smaller as the surface of the lung is approached. For the same reason, when central infarctions occur, they are more extensive than the peripheral. As a matter of course, the infarcted areas are slightly pyramidal in form, their bases being toward the periphery. The condition may affect either sex at any age.

Sudden dyspnea is a constant symptom of this disease, and it is proportionate to the area of pulmonary tissue involved. The dyspnea is accompanied by cough and a characteristic expectoration, brownish-red and darker than that of lobar pneumonia. If the infarction is due to thrombosis in the right-heart from any of the causes mentioned, there may also be a corresponding sudden irregularity of the heart's action which, of course, is reflected in the pulse. The sudden occurrence of hemoptysis of the above-mentioned character in connection with long-standing heart disease, is usually due to infarction, even though the prominent symptoms of irregular cardiac action and intense dyspnea are absent. In other cases the infarction may give rise to pleurisy with its attending pain. Sometimes pneumonia is developed to a varying extent, and even gangrene may result. Frequently the symp-

toms are so vague or lacking that the condition is entirely overlooked. As a rule, there is a slight increase in temperature, which occasionally rises to 102° F. Septic infection is often unrecognized on account of the general condition of the patient.

On palpation, vocal fremitus, as a rule, will be found to be increased, unless the infarction is central or complicated by pleurisy. Percussion will elicit dulness in proportion to the extent of the affected areas; there may be little or none if this area is small or centrally located. If the infarcted area is sufficiently large, auscultation will reveal bronchial breathing and bronchophony over it. As a rule, crepitant and subcrepitant râles may also be heard. In some cases, owing to the small extent of the area involved or to the co-existence of pleurisy, no physical signs can be detected. In such a condition the heart should always be examined.

The diagnosis is easily made by means of the sudden dyspnea, localized spots of dulness, crepitant and subcrepitant râles, a slight rise in temperature, cough, and the characteristic brownish-red sputa, which continues a longer time than in pneumonia, the co-existing heart disease, especially an old mitral lesion, and the etiology in general.

The sputa in patients with cancer of the lung resembles that in infarction, but cancer-cells will be found in the former, and there will be present cachexia and other familiar signs. According to Loomis the sputa in hydatid disease of the lung may also resemble that in infarction; in the former, however, the discovery of hooklets will determine the diagnosis.

The prognosis is always unfavorable when the condition is dependent upon cardiac thrombosis or septic emboli. It is also unfavorable in proportion to the area of lung tissue involved and the number of infarcts present. On the other hand the prognosis is generally good in the case of a small, single, peripheral infarct of aseptic origin, although even here much depends upon the original cause.

The treatment is purely symptomatic. Hemorrhage is rarely so profuse as to require the use of hemostatics. Absolute rest in bed and regulation of the heart's action, in case of disease of that organ, may be necessary. For this purpose digitalis may be employed when the heart is acting weakly. If signs of collapse develop, such as cold extremities, etc., alcoholic stimulation and the applications of sinapisms to the body and extremities are indicated. Extensive dry cupping will relieve the dyspnea better than anything else. For the dyspnea and the cough, as well as for the enfeebled and irregular cardiac action, 5 to 10 minims of Magendie's solution of morphine may be given hypodermically with good effect. Pleurisy and pneumonia, should they occur, must be treated independently of the infarction.

The following is a most interesting example of this affection:

A. D. H., a physician, aged 44 years, had acute articular rheumatism at the age of thirteen. This was complicated by endocarditis, which resulted in mitral regurgitation. At first, hypertrophy fully compensated for dilatation, and so long as this was the case he experienced no symp-

toms of valvular lesion. Later on, however, owing to secondary enlargement of the right ventricle which always occurs in these cases, he began to suffer from dyspnea, especially on exertion, such as walking rapidly or going upstairs. At the age of forty he began to notice edema of the lower extremities—a bad omen in cases of mitral lesion. This edema was occasional, and depended upon treatment. During the last year of his life, however, it became continuous, the dyspnea increased, the right ventricle became more and more enlarged, until finally jugular pulsation was noticed at the base of the neck on the right side, showing that tricuspid insufficiency had become a complication of the already bad condition. He improved very much under the administration of the infusion of digitalis with acetate of potash, but only temporarily. He experienced the greatest relief from his dyspnea from the extensive use of dry cups to the back, which were applied by means of fire, the ordinary rubber-bulb apparatus having failed to give any relief whatsoever. Cardiac stimulants of all kinds were now of no assistance. Finally, owing to enlargement of the right ventricle, a blood clot formed in that cavity, especially about the trabeculæ and columnæ carneæ, and a considerable thrombus resulted. Suddenly, he sent for me, and I found him suffering from great dyspnea and excruciating pain in the chest. There was also cough, attended with dark expectoration. Although dulness was not marked at any particular point, auscultation revealed the presence of râles in several places. Suspecting hemorrhagic infarction, I immediately sent for the late Dr. Alfred L. Loomis, who at once confirmed the diagnosis. This condition was due to emboli carried directly into the lungs through the pulmonary artery, having originated from the thrombus in the right ventricle. Very soon what may be called cardiac pneumonia set in, as evidenced by the signs of consolidation of lung tissue over a considerable area. This, with the hemorrhagic infarctions which had already occurred, resulted in death within a few days in spite of most eminent consultation and the most careful treatment.

In concluding this case, I would like to state that hemorrhagic infarction of the lungs may be regarded as an evil omen, on account of the danger of pneumonia supervening. In such cases an extensive pneumonia will be almost certainly fatal.

Sudden death from heart disease is not so common as the laity generally suppose. There are, however, certain forms of disease of the heart which do undoubtedly cause sudden death, while other forms, although fatal, give rise to complications which produce death indirectly, rather than directly through the heart itself.

Sudden death may occur in aortic regurgitation, not only from apoplexy due to the force with which the blood is driven from the left ventricle by reason of the enlargement of that part of the heart, but it may also occur in some way which is not yet thoroughly understood. It is thought by some that death in such cases is due to failure of the circulation in the nutrient vessels of the heart. The coronary arteries are so pressed upon by an enormous enlargement of the left ventricle, which sometimes

occurs in this disease, that blood cannot enter them, and heart-failure results from lack of blood-supply. Such a condition existed in a case which came under my observation, a brief history of which is as follows:

The patient was a man thirty-five years of age, of excellent habits, and apparently in good health. At my request he was seen by Dr. Francis Delafield, who confirmed the diagnosis which I had made. The patient died suddenly while going upstairs. There was no cerebral lesion.

In stenocardia the patient may suddenly die, not of spasm, but of paralysis of the heart, due to failure of the coronary circulation as a result of arterial sclerosis and shock caused by the terrible pain of angina pectoris. In fatty metamorphosis, otherwise known as Quain's fatty degeneration of the heart, death may occur at any time as a result of heart-failure or rupture. The heart may suddenly fail or rupture in cases of attenuated dilatation, although some complication, such as dropsy, is likely to cause death before this occurs. Sudden death due to rupture of the heart may occur in cardiac aneurism. The latter is usually situated in the wall of the left ventricle near the apex, and is due to thinning of the cardiac wall from previous inflammation and fibroid changes. At times it is almost impossible to differentiate this condition from mitral regurgitation. An apex systolic murmur is present in both, and both are accompanied by enlargement of the left ventricle. In mitral regurgitation, however, the murmur is usually louder than in cardiac aneurism and more frequently heard posteriorly. Enlargement of the left auricle and right ventricle with accentuation of the second sound in the pulmonary interspace is usually present in mitral regurgitation, but not in cardiac aneurism.

In fibrosis of the heart due to syphilis, alcoholism, gout, rheumatism, and lead-poisoning, the muscular fibers are gradually replaced by connective tissue until finally the heart fails to act, or cardiac aneurism and rupture ensue.

Hypertrophy of the left ventricle, when the arterioles throughout the body are fibroid and brittle, as, for example, in chronic interstitial nephritis, predisposes to cerebral apoplexy, and sudden death from this cause not infrequently occurs. In many cases this condition is preceded by retinal apoplexy, which is plainly shown by ophthalmoscopic examination.

Other forms of heart disease may be indirectly fatal, but rarely of themselves cause death.

Dr. Hare again at Work.—Dr. H. A. Hare of Philadelphia, who returned a few days ago from Bristol, R. I., where he has been spending some weeks, has so far convalesced from his late illness as to be able to resume his lectures at the Jefferson Medical College.

Epileptics Poisoned.—Two hundred and fifty patients at the Epileptic Hospital of Gallipolis, Ohio, were suddenly stricken with symptoms of ptomain poisoning on the 1st inst. Bacteriologists are making careful analyses of the food which was served during the few preceding days.

CLINICAL MEMORANDUM.

A REMARKABLE CASE OF ECTOCARDIA WITH DISPLACEMENT, THE HEART BEATING IN THE ABDOMINAL CAVITY.¹

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THE patient who presented this unique condition was brought to my office October 16, 1897, by Dr. E. M. Raynor of this city, to whom I am indebted for the early history and for the privilege of recording the case.

At the time of my examination the infant was five months old, a male, and had been under Dr. Raynor's observation since its birth. As soon as the child escaped from the uterus, an abdominal tumor, about the size of a goose egg, and only partly covered by normal skin, was discovered. Manual pressure was applied until the mass could be kept reduced by a retaining bandage and pad. The greater part of the tumor was evidently intestinal—an ordinary umbilical hernia; but in it there was a small, hard, pulsating body. In other respects the child appeared to be normally developed. During the early weeks of its life nothing unusual was observed, except a severe degree

FIG. 1.



Showing two abdominal tumors: the lower the hernia; the upper the heart.

of cyanosis. At first this was almost constant, but it gradually lessened in intensity and for some time before my examination had been noticed only on exertion. The cord had fallen off and healed normally. The child had gained steadily in weight, and by means of an abdominal pad the umbilical hernia had been easily kept reduced.

At the time of my examination I found a fat, well-developed infant, much above the average in weight. While perfectly quiet nothing unusual was observed, but when disturbed, and especially when crying, it became intensely cyanotic and continued so for some minutes after the exertion ceased. The recti muscles of the abdomen were widely separated. In the median line was a circular area, about two inches in diameter, where normal integument was wanting, and where only a thin membrane covered the abdominal contents. At the lower border of this area was the umbilicus. This surface resembled that often seen over a spina bifida. When the pad was removed the hernial protrusion became about the size of half an orange. In the epigas-

tric region, in the median line, extending from the ensiform cartilage into the upper part of the area previously mentioned, was a pulsating tumor of conical shape, $1\frac{1}{4}$ inches broad at its base, which was at the ensiform cartilage, and two inches in length. It was covered only by integument and subcutaneous tissue, the muscles being separated at

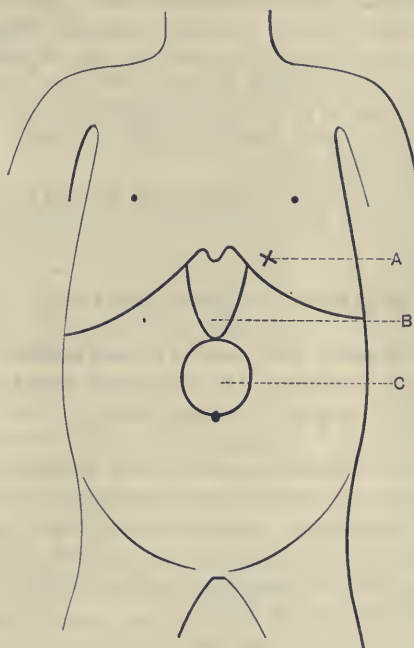
FIG. 2.



Also showing both abdominal tumors.

this point fully an inch. This body was evidently the heart. Through the thin covering all the cardiac movements could be easily observed, diastole and systole being almost as well defined as in an animal when the chest is opened. By placing the tips of the fingers beneath the apex, the heart could be lifted until the apex was at the ensiform cartilage, the body of the heart disappearing

FIG. 3.



Showing the relative size and position of the heart. (B) the heart; (C) the part of the abdominal wall where the skin was undeveloped; (A) the point where the murmur was loudest.

completely behind the sternum. This movement did not seem to cause the child the slightest disturbance. A loud systolic murmur was present and could be heard in front all over the chest. It was most distinct a little to the left of the ensiform cartilage. It was not distinct behind. A respiratory murmur was present anteriorly over the whole chest, even in the area usually occupied by the

¹ Reported to the New York Clinical Society, October 29, 1897.

heart, but was not very loud. There was moderate clubbing of the fingers. Examination of the abdomen and chest elsewhere disclosed nothing abnormal.

This case appears to me to admit of no other explanation than that of a large congenital deficiency in the diaphragm as a result of which, instead of the usual one of protrusion of some of the abdominal contents into the thorax, the heart had become displaced downward to the remarkable degree described. This had doubtless been favored by the imperfect development of the abdominal walls which also led to the umbilical hernia. This cardiac displacement must have occurred quite early in the fetal development, since the organ had become so well adjusted to these abnormal conditions that the circulation was fairly sustained.

Interesting speculation might be indulged in as to the relation and position of the pulmonary arteries, pericardium, etc. It is to be hoped that at some time these may be definitely given as a result of a *post-mortem* examination. At present, however, there does not appear to be any condition which interferes with the growth of the body, and the circulation is so well maintained that life may be indefinitely prolonged. The cyanosis and systolic murmur doubtless depend upon some other abnormality in the development of the heart, probably pulmonic stenosis.

A fairly careful search through medical literature has failed to reveal any case on record which resembles the one described. I believe it to be unique. Ectocardia is a name which is usually applied to a condition where the heart is covered only by integument and subcutaneous tissues. Quite a number of cases have been recorded, but all of them, so far as my investigation has gone, have been associated with some congenital deficiency of the sternum or chest-wall.

The accompanying illustrations will perhaps give a better idea of the position and relation of the heart than the description.

HOSPITAL REPORT.

A TEN-YEARS' RECORD OF ANESTHESIA AT MT. SINAI HOSPITAL, NEW YORK.

BY WM. H. LUCKETT, M.D.,
OF NEW YORK.

IN an editorial which appeared in the *Medical Record*, October 30, 1897, a few figures were quoted from the statistics compiled by Goult as a result of an investigation of anesthetics made by the German Surgical Society of Berlin. Some of these figures, taken from the editorial mentioned, are given in Table I.

TABLE I.

Anesthesia.	1890 to 1895.	
	Cases.	Deaths.
Chloroform.....	2286	88
Ether.....	6020	7
Chloroform and ether.....	10,162	1
Alcohol, chloroform, and ether.....	5744	1

"Would it not be more scientific to have an honest report of deaths from anesthetics and a more careful study of the subject of anesthesia?" This is a question which naturally arises after reading Goult's enormous mortality statistics. In answer to this question I have carefully compiled and tabulated the statistics which are given in this communication. These figures are taken from the record of all anesthetics, both general and local, which might result in death, and which have been induced in the Surgical Division of Mt. Sinai Hospital during the last ten years. I have omitted local anesthesia by a spray of ether or ethyl chlorid on account of non-poisonous effects. I have also purposely omitted a few ether anesthetics per rectum, which occurred early in the decade, as, there being no fatal results, they are without special importance. No reference is made to the Medical Division.

In the table, under the heading "Anesthetics," chloroform to ether means that the anesthesia was started with chloroform and, as the patient did not take it well, ether was substituted, *vice versa*, ether to chloroform. This is true up to the year 1893; but from this time on no record was kept as to which was used first, ether or chloroform, and so they are placed under the head of chloroform and ether. Indeed, it frequently occurred that, from 1893 on, the anesthesia was started with chloroform, and then ether was substituted; not because the patient took the chloroform badly, but because this method proved convenient in numerous instances. Cocain to chloroform and cocain to ether means that an operation was attempted under cocain, but the patient's suffering was so intense, or the lesion turned out to be so much more extensive than supposed, that, of necessity, general anesthesia was induced. The cocain statistics are interesting as showing 706 cases in which this drug was employed without a single instance of anything approximating severe poisoning.

During the ten years one case occurred in which anesthesia was started with chloroform, the patient taking it so badly that ether was substituted, which acting even worse than the former anesthetic, it became necessary to again employ chloroform, under which the operation was completed. Not once during the period mentioned was the "alcohol-chloroform-ether" mixture used.

Table II. is presented with the permission of the proper authorities.

The circumstances which attended the single death which occurred during this period are worthy of notice: The patient was a very healthy adult. He did not use alcohol, but used tobacco to excess. He acted as a porter about the hospital, and as such was allowed more liberty than a regular patient. He abused this freedom by smoking his pipe on the morning of the operation for which he had been prepared. The patient suffered from a cellulitis of the thumb which required incision. According to custom his heart and lungs were examined previous to the anesthesia, and nothing abnormal discovered; urinary examination also negative. The anesthetic was administered with the patient upon a wheeling-stretcher. He took the chloroform nicely, almost without a struggle,

and was wheeled into the operating-room. He was in good condition just before being lifted from the stretcher to the operating-table; that is, his respiration, pulse, and general appearance was that commonly observed in an ordinary chloroform narcosis, pupillary and conjunctival reflexes being present. While being lifted from the stretcher to the table the patient died; he was dead before he reached the table, death having apparently resulted from simultaneous respiratory and cardiac paralysis—whatever that may mean.

The anesthetic, in this instance, was administered by a most careful, conscientious, and competent physician, one whose record as an anesthetizer was excellent. This lat-

bright yellow and contains almost all of the antitoxin. The two may be easily separated.

The Disinfecting Power of Benzine in Cleansing Establishments.—RUEPP (*Corres. Bl. für Schweiz. Aerzte*, October 1, 1897) has tested the disinfecting power of the ordinary methods of benzine cleansing of clothing, etc. He finds that the common pyogenic cocci, typhoid and diphtheria bacilli, as well as the germs of cholera, tuberculosis, and anthrax are not destroyed by soaking in benzine during the usual length of time the clothing is treated in such establishments. It is worth while, therefore, to remember that this process of cleansing cannot be relied

TABLE II.

Anesthetics.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	Total Number of Anesthesias.	Deaths.
Chloroform.....	152	172	315	457	534	316	366	498	616	837	4263	1
Ether.....	307	421	468	395	387	589	610	503	615	378	4673	0
Chloroform to ether.....	15	8	12	46	41	19	0	0	0	0	141	0
Ether to chloroform.....	7	4	19	19	36	31	0	0	0	0	116	0
Chloroform and ether.....	0	0	0	0	0	0	48	27	25	64	164	0
Cocain to chloroform.....	0	1	0	1	0	1	1	1	0	1	6	0
Cocain to ether.....	0	0	5	1	1	1	1	1	0	0	10	0
Cocain.....	27	10	126	97	70	63	71	83	45	114	706	0
Nitrous oxid gas.	0	0	0	3	10	0	2	62	35	30	142	0

ter fact is emphasized because it shows that such an unfortunate accident may result when all possible precautions have been taken.

The boastful, over-confident anesthetizer is an exceedingly dangerous one, and one in whose hands anesthesia, from lack of proper precautions, is more than likely to prove fatal. Such should remember that death under these circumstances has occurred in the practice of Simpson, Sands, Agnew, and many other distinguished surgeons. However, there is no doubt that by a proper study of the patient, careful preparation, care in the choice of anesthetics, and last and most important by the exercise of every possible precaution in the actual administration, a much lower death-rate may be reasonably expected than that evidenced by the statistics of Goult. Such figures only prove (88 deaths in 2286 chloroform anesthetics, and 7 deaths in 6020 instances of ether narcosis) a shamefully reckless disregard of legitimate precautions.

MEDICAL PROGRESS.

A Method of Concentrating Therapeutic Serums.—BUJWID (*Centralbl. für Bacter.*, September 24, 1897) has experimented with diphtheria and tetanus antitoxin preparations in order to obtain concentrated solutions. The dried preparations are unreliable and under certain circumstances may be dangerous. Partial evaporation of serums at a low temperature gives a cloudy product. A better method consists in freezing the remedy. The ice is clear and there remains only a small amount of a brownish fluid in the bottom of the glass. If the glass of serum is allowed to thaw slowly the upper layer is without color and contains little beside pure water. The lower layer is a clear,

upon to sterilize infected objects. Such articles must also be subjected to heat or to some chemic disinfectant before it is safe to use them again.

Influence of Alcoholism in the Father upon the Life of the Child.—ANTHONY (*Centralbl. für Gynäkol.*, October 16, 1897) mentions a case of a healthy woman who was married at the age of seventeen years to a notorious drunkard, and who had by him, in her nine years of married life, five miserable little children of whom four died within the first ten days after birth. The fifth one, by great care, was raised to the fourth year when it also died. After this the woman was separated from her husband. She then married a healthy man, and had by him two children. The elder of whom grew to be four years old, and the younger, at the time of writing, was fourteen days old. Both were in perfect health. This great contrast between the children of different fathers plainly shows, inasmuch as syphilis was not present, that the alcoholism of the father of the first children destroyed their vitality.

Reasons for Being a Cannibal.—According to PETRIE (*Bull. Gen. de Therapeut.*, September 30, 1897) twenty per cent. of all cannibals eat the dead in order to glorify them; nineteen per cent. eat great warriors in order that they may inherit their courage, and eat dead children in order to renew their youth; ten per cent. partake of their near relatives from religious motives, either in connection with initiatory rites, or to glorify deities, and five per cent. feast for hatred in order to avenge themselves upon their enemies. Those who devour human flesh because of famine are reckoned as eighteen per cent. In short, deducting all these there remains only a proportion of twenty-four per cent. who partake of human flesh because they prefer it to other means of alimentation.

THERAPEUTIC NOTES.

Treatment of Diabetic Albuminuria.—ROBIN (*Rev. de Therapeut.*, October, 1897) gives some practical rules for the treatment of albuminuria occurring in connection with diabetes. The primary disease should first be treated, and in no case ought the dosage of antipyrin, if this is given, to exceed 30 grains a day, on account of its unfavorable action upon the kidneys. If the albuminuria is due to faulty digestion, this should be remedied; if to a lack of minerals in the system, then milk, meat bouillon, or salines should be administered to make good to the system its loss in this direction. If the albuminuria is phosphatic, as is most frequently the case, arsenic should be given to diminish the phosphatic loss, the patient taking twice daily, half an hour before meals, a tablespoonful of the following mixture in a small glass of milk:

R	Sodii arsen.	.	.	.	gr. ss
	Potass. iodid.	.	.	.	gr. xlviii
	Aq. dest.	.	.	.	$\frac{3}{4}$ vj—m.

Tonics are also indicated, such as the following:

R	Ext. cinchon.	.	.	.	gr. jss
	Quin. sulph.	.	.	.	gr. iss
	Ext. nucis vom.	.	.	.	gr. $\frac{1}{2}$.

M. Ft. pil. No. I. Sig. One pill at breakfast and at dinner.

After two weeks these remedies should be discontinued, and glycerophosphates begun in the following proportions:

R	Calci et magnes.	} aa	.	.	gr. jss
	Glycerophosphat.		.	.	
	Ext. nucis vom.		.	.	gr. $\frac{1}{2}$.

M. Ft. chart. No. I. Sig. One powder at breakfast and at dinner.

In two weeks this also should be discontinued, and a mixture of the hypophosphites prescribed, each tablespoonful of which, taken before breakfast and dinner, should contain the following:

	Strychn. hypophosphit.	.	.	gr. $\frac{1}{3000}$
	Quin.	.	.	gr. $\frac{1}{2}$
	Magnes.	.	.	gr. $\frac{1}{2}$
	Potass.	.	.	gr. ss
	Calci	.	.	gr. $j\frac{1}{2}$
	Sodii	.	.	gr. j
	Ferri	.	.	gr. ss.

Abortive Treatment of Influenza by Calomel.—After an experience of several years, FREUDENTHAL (*Ther. Monatshäfte*, October, 1897) heartily recommends the use of several large doses of calomel in the beginning of an attack of influenza. In order to abort the disease the calomel must be given before the third day. The dose for a man is $1\frac{1}{2}$ grains, for a woman about $\frac{3}{4}$ grain, for a child, as many sixths of a grain as the child is years old. Either two or three doses are required. Within six to ten hours after the last dose, the high fever abates, the headache and pain are favorably influenced or entirely disappear. The coryza and cough never become purulent and are soon overcome. For persistent nervous symptoms it may be necessary to give an antipyretic. At the close of the treatment, on account of the loss of appe-

tite, tonic bitters are indicated. In a great many cases no medicine except calomel is required. Freudenthal says that the season of the year has nothing to do with the effectiveness of this treatment, but that the sole factor determining success is the day of the disease upon which treatment is begun. Twenty-five per cent. of the cases were cured within two days. The longest duration of the disease after treatment was six days. The average duration of the disease after treatment was three and one-third days. No complications traceable to the influence of calomel were observed.

Vomiting in Pregnancy.—PAGE (*The Med. Times*, October, 1897) says of vomiting in pregnancy that "the first indication of nausea or lack of appetite, not to say vomiting, should warn a prospective mother that she is getting a little ahead of her stomach, so to say; and, then, all she has to do is simply to sip a few swallows of moderately hot water occasionally during the day, fasting, to make short and easy work of restoring the balance to the system. I have never known a single case of failure when this plan has been intelligently carried out. It may be necessary to skip only a couple of meals or it may be necessary to fast two or three days. Wait until the patient is again really hungry before giving food. Meanwhile it will be necessary to give from a quart to three pints of soft warm water daily to fulfil the requirements of the system." The writer believes that many cases have terminated fatally in which life might have been saved by the adoption of this simple plan of treatment.

The Treatment of Fissures of the Anus with Cocain and Ichthylol.—CHERON (*Prakt. Dermatol.*, No. 7) proceeds as follows: The anal fissure is first made insensible by laying upon it, during five minutes, a bit of cotton soaked in a five- or ten-per-cent. solution of cocain. As soon as the fissure is anesthetised one or two drops of pure ichthylol are allowed to run into it. This treatment is repeated daily during four or five days, by which time improvement will have progressed so far that dilatation of the anus is easily accomplished, and the fissure may now be treated throughout its whole extent. As a rule complete healing follows about ten applications.

Influence of Hydrastis Canadensis and Ergotin upon the Uterus.—As a result of the very exact experiments, SCHATZ (*Central. für Gynäkol.*, September 11, 1897) has found that hydrastis Canadensis and ergotin, whether injected into the veins or used subcutaneously, produce marked contractions of the uterus. The influence is direct, not an indirect one, produced by an influence upon the blood-vessels. The contractions after the use of ergotin are more powerful than those after hydrastis, follow more quickly upon one another, and are longer continued, and of a tetanic character; while the contractions after the administration of hydrastis are always separated by considerable intervals, which tend to grow greater after the drug has been used for some time. If used in excessive doses both remedies tend to produce a paralyzed condition of the uterine muscles. Both of these preparations produce an increase of blood pressure and of cardiac activity.

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SATURDAY, DECEMBER 11, 1897.

THE LAPORTE CASE.

THE trial and conviction of a Paris physician on a charge of homicide has roused the indignation of both the medical and lay press of Europe, and particularly of Paris, to a most commendable degree. On September 11th last, a midwife who had charge of a confinement and had met with difficult complications advised the husband to send for a physician. He concluded to wait until evening in order to take advantage of the free night medical service. Dr. Laporte, a member of the night-service staff, was called, and, after ineffectual attempts to deliver the woman of a large child, the forceps having been applied three times, he told the husband that craniotomy would be necessary to save the mother's life. This being agreed upon, he asked for some sharp instrument, as he had nothing suitable with him. A tool-chest was produced, and he selected a curved needle used for sewing mattresses, with which he punctured the head and soon after applied the forceps for the fourth time, with the result that the delivery was accomplished. He then saw that the patient was comfortable, and, leaving the necessary directions, went home.

Three days later the woman died in a hospital.

The physician who made the autopsy gave as the cause of death peritonitis following a perforation of the bladder. Laporte was arrested, tried, and, partly on the testimony of the physician, but still more on that of the midwife, the husband, and the neighbors who watched the proceedings through a half-open door, was convicted of having "committed an imprudence, an operative neglect which constitutes a grave error, *faute lourde*, which was the direct and involuntary cause of the death of the woman."

The unfortunate young man was sentenced to three-months' imprisonment, but was allowed to go free on the condition that during the next five years no further charges are made against him.

Public interest was aroused not merely by the sensational facts of the case—the extreme poverty of the defendant—the bitter attack of one neighbor who testified, for example, that the doctor would have used a hammer and chisel had not the husband snatched them from his hand—but even more by the understanding, which seemed to exist on the part of the medical profession as well as among the laity, that the court was making law for physicians in general, and that hereafter to fail in an operation will be a criminal offense. This was recognized by the daily press as well as by the medical journals. The *Echo de Paris* said of the trial, "During more than three hours this man, who has worked more than twenty years to get his diploma, whom misery has rendered timid, whom an unfortunate accident and a detention of several weeks has weakened and chagrined, was tortured by a magistrate who was blinded by professional hardness and by witnesses resolved to destroy the defendant—the same witnesses who would have sounded his name to the skies if the unfortunate operation had proved a success."

The medical press was even more emphatic in denouncing the proceedings. "Laporte was condemned," said *La Médecine Moderne*, "because he did unskilfully that which he attempted. That is to say, that the magistrates, establishing upon this point a new jurisprudence, declared themselves competent to decide that an accused physician had unskilfully performed his professional duties. . . . Rejoice, brothers in medicine! The times have changed. Heretofore we have had as protection against the attacks of the vulgar, two guarantees: The first was

our diploma. The medical faculties once determined a man's fitness to practice medicine. Now, every one who calls a doctor will determine whether he has been benefited or the reverse, and in the latter case he will exact justice. . . . The second guarantee . . . was a vague sentiment of respect and affection which surrounded the physician. This has also vanished."

"If Laporte had been a common assassin," said the *Journal de Médecine*, "he would have been treated with more consideration. It is a sign of the times. . . . It is not a physician who was vilified in a criminal court, but the whole body of medical men."

These quotations show something of the feeling which has been expressed regarding this affair. It is not wonderful that medical men resented such a remark on the part of the presiding magistrate as that made in answer to Laporte's claim that in order to save the patient's life, it was necessary to do something at once. "My God! she died just the same," was the brutal reminder of the magistrate that the operation had been unsuccessful.

After the decision had been announced, indeed before the end of the trial, public opinion turned in Laporte's favor. Several papers started subscriptions in the young man's behalf and with such success that his financial condition at least will be considerably better than it was at the time of his arrest, when, having missed his dinner for lack of funds, he had only 15 cents in his pocket.

INJURIES OF PARTURITION, OLD AND NEW.

UNDER this title Dr. Sinclair of Manchester, England, contributed to the British Medical Association at its recent meeting one of the most interesting of its addresses. With the evident belief that "confession is good for the soul" (of him who hears it), Dr. Sinclair described a state of practice in England which he deeply deplored. He has for some time been investigating the frequency with which the obstetric forceps is used, and has learned that in the manufacturing districts of England as many as seventy-five per cent. of the labors are terminated by this means. Recalling Cullingworth's recent investigations, which showed that puerperal septic infection had not materially diminished, the inference points to a connection between the two facts. Turning to the great hospitals of

the world, Sinclair finds that the frequency of forceps application is subject to great variation (from 22.6 per cent. at Winckel's clinic in Munich to less than two per cent. in other clinics). In the Manchester Infirmary, under Sinclair's charge, the forceps is not used more commonly than in many of the large Continental maternities.

We quite agree with the writer of the address in deprecating the carelessly frequent use of forceps. Those who have more business shrewdness than conscience in the practice of obstetrics are able to produce a very great mental and financial impression upon patients by giving them anodynes until the os is sufficiently dilated to apply forceps, and then delivering them with instruments. This shortens labor, produces all the theatric effect of a surgical procedure in a private house, and if it be followed up by a timely suggestion that nothing but the superior skill of the physician has saved the mother and child, the immediate returns to the doctor may be, in some instances, very considerable. That such, however, is the practice of the best obstetricians in America we do not believe; neither do we think that general practitioners of extensive experience in this line condescend to this sort of chicanery. Since medical students have been taught diagnosis by palpation the mistake is not so often made of applying forceps until the head has passed well through the pelvis. We are glad, however, to join Dr. Sinclair in his warning, and to urge that the natural forces of labor be aided and awaited with judgment and patience.

The author of the address, however, proceeded to express his distrust and disappointment in the use of antiseptic solutions and in the repair of recent injuries caused by forceps delivery. In this we are surprised at his unfortunate experiences, and regret that he should lead his readers to believe that such poor success follows the obstetrician's efforts to repair injuries. He does not recommend immediate suture of the cervix, even in extensive lacerations, and we infer that he does not practise this procedure. In striking contrast to this is the custom of the prominent maternity hospitals of this country, in which it is the routine practice to promptly repair injuries to the pelvic floor, and extensive lacerations of the cervix, especially when attended by hemorrhage. The results in both private and hospital work commend this practice.

There is every reason to believe that antiseptic solutions, when soap and water are used for preliminary cleansing, render the hands practically aseptic and greatly assist in preventing infection of the genital tract. Equally important is the invariable use of antiseptic vulvar dressings, and latterly, we have found nothing but good results follow the insertion of antiseptic gauze within the uterus and vagina in cases of instrumental delivery when the uterine cavity had been entered by either hand or instrument, and in which relaxation of the womb was threatened.

In our experience the obstetrician often faces a choice of two evils: If he allows labor to be prolonged in an ill-nourished, ill-developed, or neurotic patient, exhaustion, relaxation of the uterus and hemorrhage threaten, with danger of fetal asphyxiation through pressure; if he interferes, the patient may sustain injury or infection. The risk is less and recovery follows more promptly and completely when exhaustion is anticipated and prevented by judicious interference under surgical antiseptics.

But if we understand Dr. Sinclair rightly, it is the surgical tendency in modern obstetricians which he depreciates. He regrets the application to the parturient patient of the same prompt and thorough methods which enable the surgeon to deal successfully with other cases. We cannot agree with him in this. His own illustration is against him; for the text of his address is the case of a young woman dying of septic infection with lacerations of the vagina, and probably of the cervix, unrepaired and infected. Had this same patient been carefully delivered under thorough antiseptic precautions, her injuries closed by suture, and had suitable dressings been employed, she should have recovered.

The writer truly and wittily remarks that "modern medical students learn surgery which but few of them ever practice, while nearly all practise obstetrics which they never learn." He has hit one of the errors of modern medical education squarely on the head. We do not criticize the modern teaching of surgery, but we regret that one of the most complex conditions which the physician meets is often relegated to undergraduate students and ignorant midwives. The dangerous half-truth, "Labor is a physiologic process," has shielded the indolence and greed of many obstetric teachers. When the modern student goes to his cases of labor with a competent instructor,

with efficient and simple means for sterilizing his necessary instruments, with surgical dressings, and with the same discipline which obtains in the teaching of minor surgery, he will then begin, not only to learn, but to practice modern obstetrics. As a general practitioner, he will reduce suffering and disability among women very largely, and do much to diminish the excessive number of operations upon women, many of which may be rendered unnecessary by the judicious practice of obstetric surgery.

EDWARD P. DAVIS, M.D.

ECHOES AND NEWS.

Medical Society of the County of Kings and the Druggist.—A druggist of Brooklyn, N. Y., was convicted on November 3d of practising medicine without a diploma. He was committed to jail to await sentence.

Second Attacks of Measles and Infection.—An English physician writes to the *Lancet* (London) expressing his belief that second attacks of measles are not infectious, and cites several cases to substantiate his theory.

The Bacillus of Acute Articular Rheumatism.—Thiroloux, a French investigator, asserts that since March last he has five times found the pathogenic bacillus in the blood of persons suffering from acute articular rheumatism.

Hospital for Cornell University.—The two sons of the late Mr. Sage of Ithaca, N. Y., have presented his former residence to Cornell University to be used as a hospital for the students of that college, together with an endowment fund of \$100,000 to be used solely for its maintenance.

Lead Poisoning Due to Patent Medicine.—Two cases of lead poisoning following the use of an English proprietary mixture known as "Dr. Priestley's Compound" have been reported in the English medical journals of recent date. Upon analysis the mixture was found to contain lead, bismuth, magnesia, soda, and ammonia.

A Hospital Masonic Lodge.—The Masons of St. Mary's Hospital, London, England, have organized a new lodge, No. 2668, the "Sancta Maria," and H. R. H., the Prince of Wales, has consented to act as Worshipful Master during the coming year, having appointed Mr. Edmund Owen, the senior surgeon of the hospital, his deputy.

Siamese Twins in Yonkers.—A triple birth was recorded recently at the Health Office of Yonkers, N. Y., in which two of the children were united face to face by a ligament extending from the neck to the lower part of the abdomen of each. Both were boys of small size and they lived but an hour after birth. The third child, a healthy girl, survives.

Vaccine Virus and the United States Army.—President Wilson of the Health Department of the City of New York

has been notified by Assistant Surgeon-General Alden that the offer of that Board to supply the army with vaccine virus has been accepted, and that the contract to supply virus for the frontier posts of the United States has been given to it.

Bogus Dentist Fined.—At the instance of the New York State Dental Society, a man who has been practising dentistry in New York City without a license was brought last week before Justice Hayes in the Court of Special Sessions and fined \$350. The man is the proprietor of a "dental parlor" on Eighth avenue and was fined \$100 for a similar offense in 1893.

Responsibility of Water Companies.—A jury at Steven's Point, Wis., recently returned a verdict in favor of the plaintiff the sum of \$5000 damages against the Ashland Water Company. The cause of action was the alleged negligence of the water company in furnishing impure and unwholesome water, containing typhoid germs, to the plaintiff's husband, thereby causing his death.

Tulane University.—The fall term of Tulane University at New Orleans, which was delayed on account of the prevalence of yellow fever in that city, was opened November 29th. The faculty has announced that the session will continue until June 20, 1898, with no vacations and only occasional intermissions on holidays, in order to get in a full year's work before the next commencement.

Serum Treatment of Snake-bite.—An expedition in charge of M. Raoul, Pharmacist-in-Chief of the Colonies, which was sent by the French Government to make researches in Malaita in regard to indigenous plants, has returned to Paris. Several of the party were bitten by snakes while making their investigations, and they declare that their lives were saved by injections of Dr. Calmett's serum, of which they carried a liberal supply.

New York Academy of Medicine.—At its meeting on the 2d inst. the following nominations were made: Vice-Presidents, O. B. Douglas and W. H. Katzenbach; recording secretary, L. F. Bishop; corresponding secretary, M. Allen Starr; treasurer, H. E. Crampton. The Board of Trustees reported the gift by Mrs. Anna Woerishoffer of \$15,000 to the library endowment fund, and it was decided that this sum be set aside as a special fund to be known as the "Anna Woerishoffer Fund."

A New Hospital for New York City.—There were recently filed at Albany articles of incorporation of an institution called the Cooper Hospital of New York. According to the laws of the State no certificate of hospital incorporation should be filed until it has been approved by the State Board of Charities. Inquiry at the New York office of the inspectors of the State Board revealed the fact that the institution under consideration is a private hospital designed to treat skin diseases, and has a capital stock of \$1000 and a paid-up capital of \$500. The irregularity in the application for articles of incorporation and the extraordinary capitalization, have induced the State Board of Charities to make an investigation.

Opium Habit among Children.—*Pediatrics* calls attention to the fact that the British Opium Commission has discovered that from sixty to ninety per cent. of Hindoo babies are dosed with opium. The drug is given almost from birth up to the end of the second or third year, when it is usually discontinued. The labors of the Commission tend to show that no ill effects are felt by these children in after-life. The contention is that this tolerance on the part of native children is congenital. In support of this view, the fact is cited that opium when administered to English children in India (it is often given to them secretly by the native nurses) has a most disastrous effect. The immunity of the native children cannot, therefore, be ascribed to the climate.

Typhoid Fever in Paterson, N. J.—During the latter part of November several cases of typhoid developed at the Paterson Orphan Asylum, and shortly after the disease made its appearance among the inhabitants of the city. Sixty-two cases have been reported. Investigation showed that the asylum and many of the families in which the disease occurred were supplied with milk by a certain milkman, and that three sons of this milkman have been ill for a month with what was termed "remittent fever." It was then discovered that the water used in the dairy to wash cans, etc., was drawn from a small stream through a pipe which is situated twelve feet below the outlet of a drain from an outhouse. This pipe was removed by order of the health authorities and the man ordered to send out no more milk until he received official permission to do so.

CORRESPONDENCE.

AN IMPROVED METHOD OF GENERAL ANESTHESIA.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In the issue of your esteemed journal of November 27th, I find an article by Dr. M. L. Maduro of this city, in which he describes the new anesthetic mixtures of Dr. C. L. Schleich of Berlin, whom he visited when abroad during the last summer.

Last week I addressed a letter to the editor of the *New York Medical Record*, asking that he kindly give space to a preliminary communication of mine on this same subject (Schleich's anesthetic mixtures) in the columns of the next issue of the *Record*, which will appear December 4th.

I stated in my remarks that I had employed the mixtures in all my hospital and private operations since September 15th of the present year, the time of commencing my fall service at the German Hospital.

I have carefully studied the narcosis produced by these mixtures in all its phases (nearly 100 cases), and am more than delighted with it; all the colleagues who witnessed the operations were impressed in the same way. My results fully confirm what Schleich claimed two years ago, and again this year. There is no stage of excitation, no cyanosis, no accumulation of mucus or saliva in the throat during the narcosis; nor was there a single instance of subsequent bronchitis, or bronchopneumonia. I am sure

that whoever will carefully try the "mixtures," regardless of whether the patient be old or young, with or without bronchitis, consumption, heart disease, etc., will never return to the former methods of inducing general anesthesia with chloroform or sulphuric ether.

I would especially emphasize that the petroleum-ether (benzine) as used by Schleich must have a boiling-point of 60-65° C. (140-148° F.). In order to always obtain a reliable mixture I have tried to interest a great number of druggists throughout the city in the matter. They will keep a petroleum-ether with this boiling-point. It may also be obtained of any first-class wholesale chemist.

That Schleich should have used only one ounce of his mixture for a complete narcosis, as Dr. Maduro states, is a mistake; one ounce is the amount he first pours upon the mask, or rather, into the funnel of the mask, devised by himself. The average amount used during an operation differs according to the mixture which is selected. For an operation lasting from forty-five to sixty minutes I have found the average quantity required to be six to eight ounces.

On the basis of a promise given me during the early part of November by the President of the Medical Society of the County of New York I shall have the honor of presenting to this Society at its next meeting, December 27th, my observations upon the practical application of Schleich's mixtures in general anesthesia.

WILLY MEYER, M.D.

NEW YORK, November 27, 1897.

OUR BERLIN LETTER.

[From our Special Correspondent.]

GERMAN INTEREST IN THE LAPORTE CASE — THE QUESTION OF A JURY OF MEDICAL MEN FOR MEDICAL OFFENDERS — COUGHING AND THE DISSEMINATION OF TUBERCLE BACILLI—THE BREMER COLOR-TEST FOR DIABETIC BLOOD CONFIRMED IN BERLIN—SOME RECENT WORK ON THE EXCRETION OF PATHOGENIC ORGANISMS IN MILK.

BERLIN, December 4, 1897.

A GREAT deal of interest has been shown in the Laporte case by the German medical press, and medical men generally here in Europe seem to have realized that the questions involved in the trial at Paris are not merely local in their bearings, but are of wide professional interest. In the case in question a young doctor was called out at night to attend a woman seriously ill. He was unprovided with all the instruments which might have been of service, and made the best of the available means to accomplish the delivery of a dead child. Two days later the patient died, and on the testimony of neighbors who watched the proceedings from the next room he was thrown into prison and, after trial, condemned to fine and imprisonment on the charge of manslaughter.

The condemnation came in spite of vigorous protests from all the medical societies of Paris, and the positive evidence of one of the great obstetricians, Professor Pinard, that the lesions found *post-mortem* were probably due to necrosis from pressure during the long-continued labor. Further, it seemed to be clear that the husband had been

criminally negligent in the matter of sending for a physician. To avoid certain charges and inconveniences attached to application for medical attendance by day, he had waited until evening before going for a physician in order to receive the benefit of the free night medical service furnished by the city.

On all sides it has been pointed out that errors of judgment when not occasioned by criminal ignorance of medical principles cannot be imputed to a physician as a crime, though the results may be serious. While not every one can approve, nor would most physicians be ready to imitate, the young doctor's readiness to avail himself of extraneous means in a medical emergency, still it is only the principle of medical responsibility which is at stake.

The opinions of the German medical press bring out clearly the position taken by the profession here: That physicians must resent the judgment of their actions in an emergency by those who do not understand the circumstances and the necessities of the case. The presence of non-medical witnesses at surgical and other operations has always been considered not only inadvisable but as liable to be productive of serious misunderstandings. When, as in the present instance, they are unavoidably present their lack of technic knowledge is apt to make them, in serious operations, translate procedures which are only ordinary surgical manipulations into unnecessary or cruel mutilation of the patient. Their evidence needs the most careful sifting by a medical expert before it is worthy of credence, even in cases where the witnesses have the best of good will in the matter.

Professor Mendel, at the last meeting of the Berlin-Brandenburg Arzt-Kammer, the Department Medical Council, called attention to this case, and to some of the questions involved. He advocated for medical men in medical matters a jury of their peers. He considered that in cases involving the reputation of a physician, especially when punishment may follow an action performed in pursuance of duties as a physician, that then medical men should be the judges of the facts in the case, the interpretation and application of the law being left to follow the usual course. The profession has always shown itself ready to uphold its own dignity in the matter of violations of law, and could be thoroughly trusted to see that actual criminals receive their proper punishment. To consider that one's actions may be judged by those utterly incapable of understanding the circumstances of the case is paralyzing to the best effort in an emergency.

That some such suggestion as that of Professor Mendel will have to come sooner or later is clear from the constantly growing number of malpractice suits which are too often only a species of blackmail. The profession itself will have to assert its right to be judged by its own standards and not left to the mercy of the ordinary jurymen, whose sympathies, in such suits, are notoriously apt to be against the defendant, and who in any case has not the proper sort of knowledge to logically consider the facts.

Some time ago, Professor Flügge, the Director of the Institute of Hygiene at Breslau, announced, as the result of a long series of experiments, that the ordinarily accepted mode of the conveyance of tuberculosis is not the

true one. One of his conclusions was that dried sputum rubbed into dust and blown around in the atmosphere is not only not an evident mode of contagion in tuberculosis but that it is even improbable. For him the consumptive loosens from his infected mucous membranes during a spasm of coughing numbers of bacilli, and disseminates them in the atmosphere. The coughing act is really an atomization of pulmonary secretion. To the resulting minute particles bacilli are attached and float hours in the air surrounding the coughing patient. This theory contradicts a good deal of clinical experience in the matter of liability to contract the disease on the part of nurses and others who are during long periods in close association with such patients, and has not been published without a good deal of protest. It is admitted that Professor Flüge's experiments have thrown new light on the dissemination of tubercle bacilli in the air, and that his presentation of the subject in so striking a manner cannot but have a good effect in the increase of prophylactic measures. On the whole, however, it is urged that there is an incompleteness in the artificial comminution of tuberculous sputum for experimental purposes which does not hold good in natural processes.

A recent writer has called attention to the fact that a very simple series of experiments will throw a good deal of light on the subject. As guinea-pigs are very susceptible to tuberculosis, he suggests that one of these animals be kept close to the bed of a phthisical patient, but with the most careful precautions to prevent contamination of its food and drink. The resultant mortality and the manner of death will greatly aid in the solution of a very interesting and very practical question.

At the last meeting of the Berlin Society for Internal Medicine, Dr. Bremer's test for diabetic blood was discussed. Dr. Löwy confirmed Dr. Bremer's report to the Moscow Congress as to special reaction of the blood of diabetic patients to the anilin dyes. Professor Goldscheider, who had tried the test a number of times, having had a private communication from Dr. Bremer previous to the Congress, considered that the specificity of this reaction is thoroughly established. The greenish-yellow tint developed in the red blood-corpuscles after staining with eosin from six to ten minutes in a brood-oven, at a temperature of 35° C., is extremely characteristic and easily distinguished from the brownish-color assumed by the red-corpuscles of normal blood when treated in the same manner. Other of the anilin dyes give just as characteristically distinctive reactions.

Dr. Strauss reported that this method had been in use some months in the Third Medical Clinic at the Charité (Professor Senator's clinic), and is there considered of diagnostic value. Opinions seemed unsettled as to whether the significance of the test would add everything to our knowledge of the changes in the constitution of red blood-cells in diabetes, and of glycolytic processes, or ferments. It has not, as yet, been in use long enough to be sure that the reaction occurs in the blood of diabetic patients before the onset of glycosuria, though some claims besides those of the inventor have been made for its diagnostic availability at this stage.

A recent report of some work done at the German University of Prague, on the excretion of pathogenic micro-organisms through the mammary gland, seems interesting. Practically, none of the ordinary pathogenic germs can be found in the milk, even at a time when their presence in the circulation may be easily demonstrated. For instance, in patients suffering from severe puerperal sepsis, when streptococci were frequent in the blood, there were none in the milk. Experiments with the ordinary pus micro-organisms, even when injected directly into the blood, invariably gave negative results, and the milk was sterile to culture tests. There was the same result with virulent anthrax bacilli. Injections of the bacillus pyocyaneus were always followed by positive results, and the bacillus could easily be demonstrated in the milk, but this was discovered to be a result of the local lesions of the mammary gland which were invariably produced. The investigators believe that the same thing holds for all pathogenic micro-organisms, and that tubercle bacilli, for instance, only appear in cow's milk when there are lesions of the udders. These need not be large enough to be easily visible, in fact, they may be so small as to elude any but the most careful observation, and sometimes are only revealed on painstaking microscopic examination of a large number of specimens.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

CHYLOUS ASCITES IN CONNECTION WITH CANCER OF THE STOMACH—RUPTURE OF THE AORTA IN A FIT OF ANGER—SERIES OF ACCIDENTS FOLLOWING THROMBOSIS OF THE PORTAL VEIN—THE GRAVITY OF PROGNOSIS IN THE PRESENCE OF BRADYDIASTOLE—AGGLUTINATING REACTION FOUND TO EXIST IN CASES OF INFANTILE ENTERITIS—MOVEMENT OF THE LIVER DURING RESPIRATION.

AT the session of the Medical Society of the Hospitals, October 8th, HIRTZ reported a case of *chylous ascites in connection with cancer of the stomach*. The patient was a woman aged fifty-seven years. The abdominal fluid obtained by tapping contained 5.5 grams of fatty matter per liter. At the autopsy, which was performed soon afterward, it was found that the cancer of the stomach had invaded both the lymphatic glands and thoracic duct.

TROISIER reported three cases of cancer of the thoracic duct in no one of which was there an accompanying ascites.

LETULLE emphasized the difference between chylous ascites and chyloform ascites. Although the mechanism of the latter is not at all clear, it often occurs in a temporary form, for example, in children attacked with cardiac disease.

At the session of October 15th, THOINOT mentioned the case of a man who *ruptured his aorta in a fit of anger*, and died some hours later. The rupture was found to be in the transverse portion of the vessel and commenced at the edge of an atheromatous plaque. There resulted an enormous subpleural hematoma with infiltration of blood along the abdominal aorta. This, by pressure upon the celiac plexus produced intense pain in the abdomen up to the moment of death.

At the session of October 22d, BARTH described a *series of accidents following thrombosis of the portal vein*. The patient, a man aged forty-seven years, was seized with violent epigastric pain recurring frequently, with vomiting, but without fever. Seventeen days later, without apparent cause, the symptoms of acute peritonitis set in, and the patient died within twenty-four hours. At the autopsy, it was discovered that one intestinal coil was injected, thickened, and blackened, as if it had been strangled. The veins of its mesentery were obliterated. In the portal vein was an old thrombus, apparently the starting-point of all the trouble. It was difficult to say what was the immediate cause of the fatal peritonitis.

GALLIARD was inclined to regard the occlusion of the veins of the mesentery as the primary lesion. In alcoholic subjects, sclerosis, in this locality, is not so very uncommon. He regarded the thrombosis of the portal vein as secondary to it.

HUCHARD read a paper in which he insisted upon *the gravity of prognosis in the presence of bradydiastole* (lengthening of the diastolic interval) in cases of heart disease. An early recognition of this symptom often enables the physician to foresee and sometimes to prevent progressive dilatation of the cavities of the heart. It is in these cases rather than in cases of simple asystole that the heart receives more blood than it can expel. Digitalis, therefore, on account of its effect in prolonged diastole, ought never to be administered if bradydiastole is present.

The two chief therapeutic resources are: (1) Prevent, by one or more venesections, the overfilling of the ventricles; (2) stimulate the myocardium by the administration of large doses of strychnin and spartein as well as by hypodermic injections of caffein and camphorated oil.

At the session of October 29th, FERNET reported the occurrence of very acute pain in the region of the acromioclavicular articulation in the course of a pneumonia. The patient was a man aged fifty-six years. Twelve days after the onset of the pain there existed an abnormal mobility of the joint, with bony crepitus. The diagnosis made was that of pneumococcic arthritis with destruction of the articular extremities. The shoulder was immobilized, and the trouble cured by the establishment of fibrous ankylosis.

LE NOIR related the case of a man aged twenty-seven years, who, in following his trade, breathed the whole day long the vapors of benzine. After some hours he became, as it were, intoxicated, had headache, nausea, and a general ill feeling which persisted for some time after he left the shop. When seen by Le Noir, the patient presented purpuric spots in various parts of his body and a pleuritic effusion which puncture showed to be hemorrhagic in character. He also suffered from epistaxis and bleeding from the gums. Not long afterward he died rather suddenly. At the autopsy hemorrhagic pleurisy was found, as well as myocardial and subendocardial infarcts, numerous ecchymoses and two hemorrhagic foci in the base of the brain.

At the session of the Biological Society, held October 16th, LESAGE announced that the *agglutinating reaction, so well known in connection with typhoid fever, also*

exists in infantile enteritis produced by the coli bacillus provided the test be made in the acute stage of the disease. The period when this reaction may be obtained is a short one, and if the disease becomes chronic agglutination no longer occurs. That is to say, that the agglutinating power is an index of the reaction of the organism against acute intoxication. If the intoxication persists the body loses this property of reaction and the prognosis becomes serious.

At the session of October 23d, LABORDE announced that by means of the Röntgen ray the liver has been shown to sink four or five centimeters (two inches) during inspiration. It is important to remember this fact in attempting to determine the size of this organ. Therefore, patients should be requested to stop breathing while the physician makes percussion over the liver.

At the session held October 30th, JOLLY described the results of experiments made to determine the exact proportion of leucocytes of different varieties in normal human blood. While the relation which exists is not exact, it is sufficient for practical purposes to say that in a normal adult there are, out of every 100 white blood-corpuscles, thirty-eight mononucleated cells, sixty polynucleated cells, and two eosinophilic cells.

BLONDEL called the attention of the Therapeutic Society at the session held October 7th, to the *frequent occurrence of mucomembranous colitis in women suffering from some form of pelvic disease*. It is at present pretty generally admitted that it is not an inflammatory affection, since the excreted membranes are composed exclusively of mucus. Any of the gynecologic affections may exist conjointly with it, but especially those in which retroversion is present, either with or without adhesions of the adnexa.

Treatment consists, first, in remedying the pelvic trouble. Uterine massage has given excellent results. For the affection itself, enteroclysis, with warm water which is slightly alkaline, or to which ichthyol has been added in the proportion of five parts to one thousand, is a successful method of treatment.

Vienna.

RUPTURE OF THE LONG TENDON OF THE BICEPS—
THE TRUE POSITION OF HYDROTHERAPY—ABDOMINAL ACTINOMYCOSIS—SUBLUXATION OF THE CLAVICLE CURED BY A NOVEL OPERATION—CONTAGIOUSNESS AND PROPHYLAXIS OF LEPROSY—MECHANICAL TREATMENT OF TABETIC ATAXIA.

At the session of the Imperial Royal Society of Physicians, October 29th, PORGES presented a patient who, four weeks previously, had *ruptured the long tendons of his biceps muscle*, the rupture being attended by a distinct crack. The symptoms noticed immediately after the injury persisted. The arm was powerless, and at the point of the insertion of the biceps tendon there was a sensitive point. The natural enlargement of the arm, due to the biceps muscle, was lower down on the affected than on the opposite side, this being especially noticeable on bending the elbow. The diagnosis was further confirmed by feeling the end of the ruptured tendon.

EWALD exhibited a case of *micrognathia, in a girl seventeen years old*, of a symmetric type and of extreme

degree. It was without doubt of congenital origin. Such instances among adults are rare, because children born with this malformation usually die early. Cases of micrognathia, due to osteomyelitic affection of the epiphyseal line, are almost always asymmetric. Treatment, according to Bergmann, consists in resection of the joints and the introduction of an inclined plane on the hard palate so that by every closure of the jaws the lower jaw is forced forward.

WINTERNITS spoke of the *advantage of hydrotherapy* in cases formerly supposed to be unsuited to such treatment, for example, in heart disease, anemia, and in wasting conditions. Improvement is observed in an increased metamorphosis, oxidation, and muscular power. In the treatment of nervous diseases hydrotherapy is invaluable. It has been shown by Türck that friction will restore the sensitiveness to anesthetic zones, and reflexes which have been lost may be recovered. He particularly objected to the widespread view that hydrotherapy depends chiefly upon technic. The great difficulty is in determining the dosage of the irritation and the extent of the following reaction, because the latter cannot be exactly measured.

At the session of November 5th, EWALD showed a case of *abdominal actinomycosis* occurring in a woman whose illness began last January with an attack resembling appendicitis. An abscess was opened, and thin pus was discharged during four subsequent weeks. The sinus then closed, but had to be repeatedly opened in the course of the next four months. Then, as the scanty pus contained characteristic actinomycotic grains, and the administration of iodid of potash was without effect, the area was widely incised, and the diseased tissue removed as far as possible. Two lesser operations were necessary at a latter date before the cure was complete. The speaker was of the opinion that actinomycosis is by no means as rare as is generally supposed. When his attention was directed to it, Ewald found a number of patients who had actinomycotic pustules on the face or neck. These lesions usually heal spontaneously, and unless the pus has been carefully examined, they may easily pass for simple suppuration.

STERNBERG mentioned a troublesome *subluxation of the sternal end of the clavicle produced by a fall*. On account of the tendency of the dislocation to recur even after the removal of the meniscus, the clavicular portion of the sternocleidomastoid muscle was transplanted to the periosteum of the first rib, thereby relieving the clavicle of its muscular strain, and affording a covering to assist in keeping the bone in position. The attempt was entirely successful.

KAPOSI spoke of the *contagiousness and prophylaxis of leprosy*. The infectious nature of the disease is agreed to by all observers. Concerning its contagious character there is not such unanimity of opinion. Setting aside the supposition that it is caused by eating fish, the two theories at present held are those of heredity and contagion by contact. The occurrence of the disease in those whose parents were free from it, the discovery of the lepra bacillus, and the sudden increase of leprosy in countries where it had always existed, and its outbreak in places where it

had never before occurred are all facts which incline one to the theory of direct contagion. Nevertheless, we must frankly admit that the means of such direct transference are wholly unknown; and the finding of numerous bacilli upon the persons of the afflicted individuals is not of itself proof that contagion is thereby favored. For instance, favus, whose bacteria are most accessible, is not very contagious, while herpes tonsurans, whose germs are deeply hidden, is contagious in a high degree. The general opinion expressed at the recent Leprosy Conference at Berlin was not so much in favor of a strict segregation of the patients, as it was in favor of removing them from the miserable surroundings in which so many of them are placed. Patients who are comfortably situated can safely be left to the cares of their families.

At the Medical Club, session of October 27th, BUM read a paper on the *mechanical treatment of tabetic ataxia*. The patient's powers of coordination is diminished because his sensibility is diminished; but other organs, especially the eye, can be trained to substitute for the lost sensations, and so enable the performance of many acts which had already become impossible. This is accomplished by having the patient regularly practise such motions as are indicated in the particular case. Thus to train the hand, he is given a board with pegs in various holes, which he attempts to touch quickly, guiding his hand by the sense of sight only, or to follow along a certain line with a pencil, etc. Similar exercises are arranged for the feet, and there are also standing and walking exercises. This method of treatment requires great persistence on the part of both physician and patient, but it is so certain in its results when persistently employed, that Fränkel says, "that if no good results follow its use in uncomplicated cases, the treatment has not been properly carried out." Even in paralytic stages the treatment has been successful, which is proof that the trouble is an ataxic one only. In two-months' time a patient who could not walk has learned to go about even in the dark, and to go down stairs without stumbling. A part of the first rapid improvement is no doubt due to the fact that the patient regains the confidence in himself which has been lost.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.—SECTION ON PEDIATRICS.

Stated Meeting, Held November 11, 1897.

DR. J. HENRY FRUITNIGHT, in the Chair.

DR. W. N. BERKELEY read a paper, describing a case of CONGENITAL TUMOR OF THE HARD PALATE.

On June 15, 1897, an infant, born at or near term, was admitted to the Presbyterian Hospital one-half hour after birth, with a tumor as large as a man's fist projecting from its mouth. The growth was smooth, nodular, glistening, and was attached by a pedicle two centimeters thick to the middle of the hard palate just behind the alveolar process. The growth was at once removed with the *écraseur* by Dr. Andrew J. McCosh, and its base

trimmed with scissors. Slight bleeding was checked by the thermocautery. The patient did well temporarily, but the discharge from the mouth soon caused a septic pneumonia. The father was dissatisfied, and took the baby home on the third day, where it died a day or two after. Autopsy confirmed the diagnosis of pneumonia. No other details were obtainable.

The specimen presented has been kept five months in a four-per-cent. solution of formalin. It now measures 10 cm. in length, 5 cm. in width, and weighs 51.5 grams. It has several hour-glass contractions and polypoid knots. The surface is smooth to the touch. On section the growth is seen to be partly cystic, partly solid. The cysts originally held a clear serum, and probably are dilated lymph-channels. There also are a few nodules of cartilage visible to the naked eye, and one or two small cheesy masses which suggest half-dried gland secretion. Some of the palatal cartilage may still be seen at the point of attachment.

The microscope shows the solid tissue to consist largely of capillaries and very small blood-vessels, lying in a finely reticulated, sometimes granular, embryonal connective tissue. This also contains an immense number of cells which in places lie closely packed around the vessels. The cells are round or oblong with large nuclei. Adipose tissue is present, and what appear to be leucocytes are collected here and there in heaps outside the vessels. There are also many encapsulated groups of fairly typical, closely crowded cartilage cells. The sheath is of thin, striated epithelium, which is sometimes squamous, sometimes columnar. The columnar form shows indefinite traces of ciliation. There are a few altered blood-vessels. No part of the sheath which was examined contained hair. The tumor being a mixture of several elements normal to the palate, is probably a benign growth, or the result of a malposition of tissue-elements in the development of the fetus.

DR. A. JACOBI: This case is a very peculiar one. The majority of large tumors of the mouth are teratomata. This is doubly interesting because it is not of that nature.

A CASE OF LATERAL CURVATURE OF THE SPINE, WITH PHYSICAL SIGNS SIMULATING A NEW GROWTH OF THE PLEURA.

DR. J. S. FERGUSON exhibited a patient, fourteen years of age, who came under observation July 19, 1897, and presented a lateral curvature which had first been observed two months previous to that time. She is the fifth of a family of eleven children, most of whom died young. Her parents are healthy Germans, and there is no family history of cancer, tuberculosis, or syphilis. The personal history is as follows: Height, four feet nine and three-fourths inches; weight, seventy-two pounds, which is somewhat under the average. She had scarlet fever when fifteen months of age, and measles during her third year. She has had no other illness except an occasional attack of tonsillitis. She has never had a cough and complains only of the curvature. The pulse, respiration, and temperature are normal.

Physical examination shows a slight lordosis, marked lateral curvature of the spine to the right, and elevation

of the right shoulder. The point of maximum deviation of the spine is slightly more than one inch to the right of the normal position. Motion of the chest-wall on the right side is limited, and a distinct bulging beneath and just in front of the right scapula is noticeable. In front of this, in the mid-axillary line, is an apparent depression in the chest-wall. The left side of the chest is normal. There is no enlargement of the axillary lymphatic nodes, but those in the anterior cervical region on both sides are slightly enlarged. This, the mother says, dates from the attack of measles. There is slight pallor of the skin and mucous membranes, but the patient appears to be fairly well nourished. Palpation of the chest reveals diminished, almost absent, vocal fremitus over the area of enlargement; it is normal elsewhere. On percussion there is marked dulness with a distinct sense of resistance over the bulging area. This is surrounded by an area of slightly increased resonance, normal or slightly increased resonance being present *below* the area of dulness. Percussion of the opposite lung yields a normal or slightly extra-resonant note. On auscultation, the respiratory murmur is diminished in intensity, distant and harsh in character, over an area of seven and a half inches in the vertical and six inches in the horizontal diameter, which corresponds to the area of dulness. There are no audible râles. Respiration is not bronchial or harsh in character. The voice sounds are diminished in intensity, and there is slight bronchophony. The affected area is surrounded by a zone of puerile respiration, while the respiratory murmur over the left lung, especially at the apex, is slightly exaggerated. She is able to lie equally well upon either side. She also says that she has had an occasional attack of sharp pain beneath the right scapula during the past two months. This pain is intermittent, and continues one or two days.

DR. A. JACOBI: In spite of the elaborate description, I cannot convince myself that there is a tumor in this case. There is dulness over a very small area, but over a large portion of the right side there is good resonance, especially when the spine is straightened out. I believe that the dulness is due to the increased development of the muscles on that side and in part to the turning of the body caused by the scoliosis. This would diminish the area of resonance. There is good resonance everywhere with the exception of over the lower part of the scapula, and there is no such dulness as one would expect if a large and growing tumor were present. The scoliosis is more marked than it usually is in these cases.

DR. L. EMMET HOLT: I am of the same opinion as Dr. Jacobi. I find it difficult to believe that the child has anything but a very rapidly increasing curvature of the spine, and the lung has suffered on account of the compression.

DR. HARRY KOPLIK: I agree with both preceding speakers. The diminished respiratory murmur may be explained by the emphysema which is usually found in such cases. Vocal fremitus is present, and it is only the respiratory murmur which is diminished.

DR. N. E. BRILL: The physical signs would not lead me to make a diagnosis of tumor of the right lung. The

percussion resonance was certainly increased when Dr. Jacobi straightened the child's spine.

DR. FERGUSON: I can only add that the case was not presented with the absolute diagnosis of a new growth of the pleura. This was only suggested on account of the many physical signs which seemed to point to it. I found an area of dulness and diminished respiratory murmur, with a good percussion note not only above, but in front, below, and posteriorly, between it and the spinal column. This I can hardly explain, except by the possible existence of something which is not pulmonary tissue.

DR. JOSEPH COLLINS then read the paper of the evening, entitled

THE CLINICAL AND PATHOLOGIC INTERPRETATIONS OF TIC. (See page 747.)

DR. JACOBI: After hearing this profound and elaborate paper, please listen to a very few words from me. If in tic we have to deal with a degenerative neurasthenic disorder, I think we had better abandon treatment of this symptom so long as we can do so little for the disease. But to my certain knowledge there are tics which can be cured and which are not the result of deep-seated cerebral degenerations. Tic is generally facial, causing grimaces, winking and blinking, sniffing, drawing up one or both sides of the nose, or one or both corners of the mouth, shrugging of the shoulder, or the turning of the head in different directions. The tongue is often thrown about in the mouth, and the patient sometimes makes a peculiar noise. I have seen many cases of torticollis, and I have cured a great many because I pay attention to the etiology. It is possible that I have been fortunate enough to see many cases which were curable. In 1886 I published a paper on chorea due to nasal abnormalities, and have since written another on the same subject. I have seen a great many cases where tic was not dependent upon cerebral degeneration, but upon degeneration of the mucous membrane and submucous tissue of the nose. My attention was drawn to this condition many years ago, and I was glad to find an elaborate paper on the subject by McKenzie, referring to the intimate connection of the outlying branches of the trigeminus with possible reflexes. From this point of view I have studied the cases, and I have had many in which treatment of the nose by simply washing it out twice daily, for years if necessary, touching it with chromic acid or the actual cautery, or by removal of adenoid growths, has cured them. I am also convinced that epileptic attacks may be due to this cause—nasal irritation. Many cases are certainly benefited by treating the nose and nasopharynx. Tic often occurs in healthy children, and it is not always due to degeneration, as modern teaching would have us believe.

DR. B. SACHS: There is every reason to be indebted to Dr. Collins for his fascinating presentation of this subject. I am sorry to be obliged to disagree with him on some points. I am sure that every one will agree with me that no subject has given the writer on nervous disorders so much perplexity as this subject of tics. The first point which the author has raised is the matter of classification. Every one who classifies this subject begins with chorea, and gradually goes on to the tics. Dr. Collins

says that we must call these disorders tic and nothing else. I do not think we ought even to give up the term choreiform. There is not so much difference between these terms as Dr. Collins seems inclined to think. We have just as much right to say choreiform manifestations as we have to use the term epileptiform manifestations, and these, Dr. Jacobi allows, are much more nearly related to chorea than some others which are types of the disease. There is some reason for doubting the wisdom of separating these conditions and putting them in distinct categories. There is every possible difference between an ordinary facial tic, which more often affects old people, and the so-called degenerative neuroses occurring in a child and not necessarily a matter of family degeneracy. I am sorry he attaches so much importance to these newer doctrines which are not under control, although I am glad he grants two kinds of degenerates—the inferior and the superior. All these stigmata are not positive signs. Although there may be a great deal in Lombroso's doctrine as regards degeneracy, I think we are carrying these things too far. The facial tics are found in a large number of individuals who do not present a single one of these degenerative stigmata. If Dr. Collins says that *la maladie tic convulsif* is a degenerative neurosis, I can agree with him. I know of two cases, occurring in a man and a woman, in which there is a tic of this type. But we cannot draw positive inferences from these new doctrines. In regard to the relation of tics to myoclonus, the last case described by Dr. Collins is much more conclusive. I have now under observation in Mt. Sinai Hospital a case very much like the one referred to by Dr. Collins—a man with a distinct tic or spasm of the diaphragm which extends to the intercostal muscles. You can see each single clonus contraction of each muscle involved, and the whole thing would come very properly under the head of myoclonus. While some of the tics may be degenerative neuroses, it is not safe to say that everything which Dr. Collins calls tic come under this head.

In regard to treatment, there is one point of difference between the author and myself. I do not try to poison my patients nor do I think that he does. Drugs should not be given in large quantities; on the contrary, the smallest amount which will check the disease should be employed. I have not seen good results follow the use of the salts of copper and silver. The only remedy which proves beneficial in facial tic is atropin administered by means of hypodermic injections. It will not cure, but it assists in ameliorating an attack and in making the patient a little more comfortable.

DR. COLLINS: I have but little to add, save to reiterate and emphasize some of the statements made in the paper. In reference to Dr. Jacobi's remarks, I would say that I am quite familiar with his paper in which the genetic relationship of nasopharyngeal diseases to certain forms of simple facial tic has been pointed out. No one can deny that that such a relationship exists, but it is relatively uncommon when compared with the whole number of facial tics in the young. At the present time I have two girls with facial tic under treatment, the kind which, if you will still allow, I shall call the degenerative type,

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ORIGINAL ARTICLES.

RATIONAL GYNECOLOGY.

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IT is not the purpose of this paper to enter upon a detailed consideration of the various pathologic conditions with which the gynecologist has to deal, but briefly to call attention to a few principles which, though not unknown to the masters of this branch of medical science, appear to receive much less practical attention than they deserve. I do not dare to presume that this paper will contain anything particularly novel in principle or unique in method; my aim is simply to show that it is possible to make a practical and successful application of every rational principle which has been developed by the sagacious observations of Sims, Peasley, Emmet, and others of the pioneers of American gynecology.

From a theoretic standpoint, gynecologic methods as presented in our most recent text-books leave little to be desired, but in practice how seldom do we see a thorough-going application of the methods calculated to reach the causes of the pathologic conditions present? For example, every gynecologist knows that uterine retroversion is not a distinct pathologic entity, but merely a symptom, and the same may be said of cervical erosion or granular degeneration, and of the various morbid conditions misnamed chronic metritis, endometritis, etc.; nevertheless, in ninety-nine cases out of a hundred these symptoms, which are Nature's sign-boards to direct attention to disturbing factors, are treated by merely palliative means, such as pessaries, pledgets, cauterization, antiseptic lotions, etc.

It is not usually a difficult thing to cure a cervical erosion, a catarrh, a prolapse, or a retroversion by palliative or more radical measures, and after the lapse of a few weeks or months, often even a few days, the same symptoms or others of allied character return, and the same or similar remedies must be reapplied. It is not uncommon to observe cases in which women have been under the care of gynecologists almost steadily for from one to five years, or even longer, often until both money and patience are wholly exhausted. In the end the unfortunate victim is no better than at the beginning of the treatment, because the underlying causes have not been

reached; the leaves of the pathologic tree have been picked off, but the tree itself has not been plucked up by the roots, and continues to bear fruit. The visible effects of disease are the result of causes which lie beneath and often out of sight. Unless these causes are removed the morbid condition is certain to be reproduced. The principles which I have gradually come to adopt in the practice of gynecology during nearly twenty-five years of active practice are the following:

I. Excluding infectious maladies, the local symptoms or pathologic phenomena do not, as a rule, afford evidence of a purely local disease, but are simply a local expression of morbid conditions more or less generalized in character.

II. Displacement of the pelvic viscera is not, as a

FIG. 1.



FIG. 2.



Fig. 1.—Showing visceral displacement from incorrect standing and corset-wearing.

Fig. 2.—Showing displaced viscera.

rule, an isolated pathologic condition, but is associated with similar displacements of the viscera of the abdominal cavity.

III. The principal causes of uterine and ovarian displacements and congestions are such as affect the static relations and the circulation of the viscera of the abdomen as well as those of the pelvis, and hence, the rational treatment of displacement of pelvic organs requires the removal of all causes of similar displacement of the abdominal organs as well as of the pelvic viscera, and the restoration of the normal supports of these organs.

IV. For permanent results the patient must be made sufficiently well to be able to dispense with special treatment, and so that she can endure with-

out inconvenience the ordinary wear and tear of life and with no resulting injury.

So-called pelvic disease, excluding infections, is seldom a distinctly local affection.—A failure to recognize this principle has led gynecologic surgeons to remove a vast number of hyperesthetic ovaries which were sensitive only because the patient was suffering from a general condition of malnutrition and resulting nervous irritability, and not infrequently to perform unnecessary hysterectomies, dilatations, curettements, and plastic operations upon minute cervical and perineal lacerations; sundry other operations have likewise been performed.

The gynecologist meets with a vast number of cases in which the symptoms relating to the pelvic organs are present simply because the patient's general health is not good. Every function is disordered, every nutritive process disturbed, and it is wholly on account of some predisposing or exciting cause that this expression of a general morbid condition is made by the pelvic viscera. Physical depravity is much more frequent than any other condition in which pelvic symptoms are prominent. Total extirpation of the pelvic viscera will not cure such a condition. I have seen many patients who had had both uterus and ovaries removed by some specialist possessed of a penchant for this sort of surgery, who were not relieved one whit of the various annoying symptoms on account of which the operation was performed, but whose condition was, on the contrary, actually made worse. I may also say the same with reference to such minor operations as trachelorrhaphy and perineorrhaphy. I think it may be safely said that quite a large majority of the patients upon whom these operations are performed, except in the most extreme cases, are greatly disappointed in the results experienced, backache, dragging pains, headache, neuralgia, indigestion, intestinal inactivity, depression, and other annoying and distressing symptoms remaining, or returning as soon as the patient loses the temporary benefit derived from a few weeks' enforced rest in bed. These disappointments are the result of a failure to recognize the *general* character of the patient's malady. It is a fact that the mere existence of a cervical tear, an ovarian or uterine tenderness, or the coexistence of these conditions with symptoms in remote portions of the body cannot be regarded as indications of any causative relation between the pelvic condition and remote local or general symptoms.

A pelvic examination, even the most thorough, is rarely sufficient to furnish the necessary data for instituting a rational plan of treatment. In the great majority of chronic cases, excluding tumors and infections, the whole woman is sick—the whole body—and the condition of every important organ and

every vital function must be investigated, and the possible relation of any general morbid condition to the pelvic symptoms must also be carefully studied.

Displacement of the pelvic viscera is not, as a rule, an isolated pathologic condition, but is associated with similar static disturbances of the viscera of the abdominal cavity.—It should not be forgotten that the pelvic and the abdominal cavities really constitute one cavity, which might be termed the lower cavity of the trunk, since no partition exists between them. From this fact it must be apparent that general causes or conditions operating upon the abdominal viscera must affect in a similar manner the viscera of the pelvis. Prolapse of the organs of the abdominal cavity necessarily tends to produce displacements of the pelvic organs, although it is surprising to note with what obstinacy the viscera of the pelvis not infrequently resist the disturbing influence of extensive displacements of the viscera of

FIG. 3.



FIG. 4.



Fig. 3.—Showing displacement of spleen and other viscera from corset-wearing.

Fig. 4.—Showing visceral displacement in a woman who had worn a "health corset."

the abdomen. During seven or eight years I have made careful observations of the position of the abdominal viscera in all cases of pelvic disease which have come under my observation, and in a recent study of the cases in which complete notes were taken I find some most significant facts which may be briefly summarized as follows:

Total number of cases examined in which pelvic or abdominal displacements existed	2132.
Cases of displacement of pelvic organs.	1089—52 per cent.
Cases of displacement of abdominal viscera without displacement of pelvic viscera.	1023—48 per cent.
Cases of displaced pelvic viscera without displacement of abdominal viscera.	134—6 per cent.
Floating kidney.	357—17 per cent.

Only such cases were included in the list of pelvic displacements as presented some very marked displacement, as retroversion, marked retrocession, or procidentia. Cases of ante flexion and slight prolapse were not counted. It is evidently impossible

to draw from these results any other conclusion than that visceral displacements in the pelvic cavity do not constitute a separate and distinct class of disorders, but that they are etiologically and pathologically linked with static disturbances of the organs of the abdomen. Hence, it is apparent that in the study and the treatment of pelvic disorders, at least those involving visceral displacement, the pelvis must be considered simply as a portion of a common cavity occupying the lower part of the trunk, subject to practically the same disturbances and requiring for the relief of one diseased part attention to the whole.

The rational treatment of pelvic disease requires the removal of the causes of displacement and congestion of the abdominal viscera as well as similar conditions of the pelvic viscera.—The facts previously cited are certainly such as to carry with them the conviction that chronic disease of the pelvic organs, especially

FIG. 5.



Showing position of viscera in corset-deformed woman.

displacement, is associated with similar conditions of the abdominal viscera. They also show that displacements of the abdominal viscera are much more frequent than like conditions of the pelvic viscera, the latter organs being more thoroughly protected by Nature against disturbing influences.

Since Dr. Trestour, the eminent French physician, pointed out a few years ago the important relation of prolapse of the various abdominal viscera to different forms of disease in both men and women, I have made a diligent study of the position of the abdominal viscera in all cases coming under my observation. I have nearly always found serious displacements of the viscera accompanied by extreme irritability of the sympathetic nerve-centers of the abdomen, especially the lumbar or hypogastric plexuses and the solar plexus. The strain upon and the constant irritation of the great sympathetic centers of the abdominal cavity, from displacement of the colon, kidneys, or liver, is a constant source of reflex irritability, which,

acting first upon the great centers of the brain and spinal cord, may be reflected to any or all of the peripheral nerve ramifications. That such an irritation exists is shown by the fact that tenderness of the solar plexus, of one or both of the lumbar ganglia, or of the lumbo-aortic plexus was found in a large proportion of the total number of cases to which the foregoing statistics relate. I have long been convinced that the greater number of symptoms, such as backache, dragging sensation across the lower abdomen, inability to stand long upon the feet, and similar symptoms are not, in the great majority of cases, due to pelvic disorders, but to the general visceral prolapse which not infrequently involves all the organs of the abdominal cavity.

Figures 1 to 6 illustrate some of the characteristic deformities of figure and displacement of internal organs which I have observed in connection with cases of pelvic disease.¹

To effect a permanent cure in these cases usually requires considerably more than the employment of such local palliative measures as pledget-placing, electricity, and vaginal douches, or even plastic operations. Such methods of treatment must be instituted as will reconstruct the constitution, give tone to the nerves, vigor to the muscles, and cause a general increase of vital energy.

Only a brief statement of the methods by which this may be accomplished will be possible within the limits of this paper. First of all, it is my custom to make a thorough examination of every patient who comes under my care. This examination includes, in addition to the ordinary investigation of the patient's early and family history and a careful study of the morbid symptoms and conditions relating to the pelvic organs which the case presents, a thorough study of the position of every abdominal organ, a careful examination of the blood, a test of the strength of each individual group of muscles, and such other special investigation as may be indicated. The examination of the abdomen is begun by careful palpation, all waistbands being loosened and the clothing so adjusted as to facilitate the examination. One's fingers soon become sufficiently trained to enable him to quickly detect any considerable change in the position of the liver, kidneys, stomach, or colon. The condition of the pelvic viscera is then carefully determined by the bimanual method.

Next, careful note is taken of the pose assumed in standing and sitting. The obliquity of the pelvis is determined by the pelvi-oblique-meter. In by far the majority of cases this is found to be greatly diminished through abnormal straightening of the lum-

¹ The cuts used in connection with this article are borrowed from the author's work, "The Art of Massage."

bar spine, a condition unquestionably conducive to prolapse of both the abdominal and pelvic viscera. The patient's clothing is investigated, and peremptory orders are issued that tight bands shall be at once discarded.

The next day, if the condition is such that the patient is able to be about, dynamometer tests of the various groups of muscles are taken, and a physical chart or graphic representation is made, which at once shows the weak spots in the patient's neuromuscular apparatus and also the degree of weakness. The physical coefficients, based upon the mathematic data obtained by the dynamometer, indicate at once whether the patient should gain or lose in flesh, and

FIG. 6.



Showing the effect of heavy skirts and a bad position in a woman aged twenty-four years.

the kind and amount of exercise required. In cases of special interest, outline tracings of the front and side profiles are made, as a record of symmetry and habitual pose. Examinations of the blood and the urine are made; and, if it is necessary to determine the digestive capacity, a test-meal is given. The examination being completed and a careful record made, the treatment is usually outlined as follows:

A week's program of baths, consisting of one or two vaginal douches daily of such a temperature as is adapted to the patient's condition, sitz baths (80° to 90° F.), the ordinary shower-bath, spray, and douche,

the Scotch douche, salt glows, electric-light baths of three- to five-minutes' duration, tonic applications of faradic electricity in the form of general faradization, the sinusoidal electric current with slow alternations applied to specially weak groups of muscles, applications of the galvanic current to the spine and the sympathetic centers of the neck and abdomen, general massage, special massage of the abdomen, pelvic massage, manual Swedish movements daily, mechanical Swedish movements, Swedish gymnastics and light calisthenics in the gymnasium, and, in appropriate cases, swimming, bicycle riding, boating, and other light exercises, and such other specific treatment as individual cases may require. If the patient is thin, careful attention is given to the application of such dietary measures as will be conducive to the most rapid gain in flesh. If the patient is obese, reducing measures are employed. In case the patient habitually sits or stands with the spine abnormally straightened, thus encouraging visceral prolapse by diminishing the obliquity of the pelvis, she is subjected to a special course of training and instruction to correct this injurious attitude. In many cases an abdominal supporter is employed. (Fig. 7.) A more specific description of some of the measures employed may be of interest:

Baths.—In addition to sitz, shower, and other baths, various local applications are made, such as fomentations to the spine, hot sponging, or hot and cold applications to the spine, fomentations, hot bags, and compresses over the abdominal or pelvic regions, foot baths, hot and cold applications to the head, effervescing or carbonic-acid-gas baths, electric, Russian, and Turkish baths, etc. The electric-light bath continued just long enough to produce slight moisture of the skin and followed by a cool shower bath I find a most excellent tonic measure. Showers, and all forms of sprays and douches are employed with apparatus so constructed that absolute accuracy in regard to time, temperature, and pressure may be easily secured. Experience shows that it is only by the employment of accurate measures that definite and reliable results may be obtained.

Electricity.—The era during which electricity was considered a panacea for all human ailments and especially for maladies peculiar to women has passed. The number of over-enthusiastic electrotherapeutists is certainly much smaller than it was a few years ago. It is now, I think, generally conceded that electricity is actually curative when employed by itself alone in but a very small proportion of cases of pelvic disease. Nevertheless, it is an exceedingly useful palliative. For the relief of ovarian and other forms of pelvic pain I find the rapidly alternated sinusoidal current superior to all others. The slowly alternat-

ing sinusoidal current furnished by the apparatus shown in Fig. 8 is a most efficient means of developing weakened muscles. It produces powerful contractions without pain, a contraction occurring at each alternation of the current. Both forms of the current may be used for internal or external application, or in combination.

Massage.—General massage is of great value as a means of improving the patient's general nutrition, but I attach great importance to abdominal and pelvic massage used in connection with general massage. During a good many years I have given attention to the development of these special forms of massage, and have seen most excellent results from their employment. I shall not occupy space in this paper to describe fully the methods of abdominal and pelvic massage, but I have endeavored to consider the subject fully in my work, "The Art of Massage."

Massage of the Abdomen.—The following rules should be carefully observed in abdominal massage:

1. General abdominal massage should not be administered until two hours after eating.
2. The bladder should always be emptied just before abdominal massage.
3. In obstinate cases of fecal accumulation, a colocyser (large enema taken in right Sims' or knee-chest position) of warm water should be administered, the water being allowed to pass off before treatment.
4. The patient should be taught to relax the ab-

FIG. 7.



Showing a natural abdominal supporter.

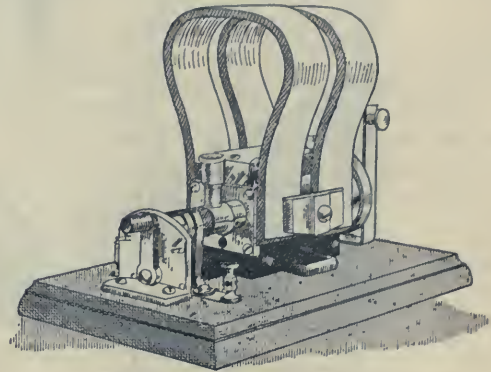
dominal muscles, and to breathe deeply and regularly during treatment.

5. If the abdomen is very sensitive, apply a hot fomentation before giving the massage.
6. If the skin perspires very freely, render it firm and smooth by sponging with cold water.
7. Very "ticklish" patients require careful education by avoidance at first of superficial movements.
8. Pain and coldness of the extremities or depres-

sion after abdominal massage is due either to bungling or violent treatment or to extreme hyperesthesia of the abdominal sympathetic. In such cases fomentations and the moist abdominal bandage should be employed in connection with massage.

9. It is important in all manipulations of the abdomen to exercise great care not to excite pain. All movements should be executed in such a manner as to avoid sudden thrusts, thereby causing the patient

FIG. 8.



Showing new sinusoidal apparatus.

pain or other disagreeable sensations, as such disturbances create rigidity of the abdominal muscles, thus seriously interfering with the effects of the manipulations.

10. In employing massage of the abdomen, the operator should stand over the patient, so as to aid his hands as far as possible by the weight of his body, taking care, of course, to graduate the pressure to the requirements of each individual case.

11. All deep-kneading movements in massage of the abdomen should be slower than for other parts of the body, to allow time for the movement of the fecal mass.

The different procedures to be employed in abdominal massage may be briefly discussed as follows:

Reflex Stroking.—With the ends of the fingers make very light strokes in a circular or semi-circular direction about the umbilicus. Begin very close to this point, gradually extending outward, then return and repeat. Also make vertical strokes along the sides in the mammary line and parallel with the rectus muscle. Strokes may also be made over the fourth, fifth, and sixth ribs at the sides of the chest. In sensitive persons one-sided contraction of the abdominal muscles or a twitching at the epigastrium will be noticed as the result of these so-called abdominal and epigastric reflexes. This procedure is strongly exciting; some patients are not able to endure it. The profound reflex which results in patients who are very sensitive or ticklish is evidence of the

strong influence of this procedure upon reflex nervous activity.

Nerve Compression.—(Fig. 9.) The stomach and the intestines are directly controlled by the solar plexus and the lumbar ganglia of the sympathetic.

make a considerable degree of pressure in order to reach them. The tips of the fingers placed upon the points indicated should be carried directly back toward the spinal column, the patient in the meantime being directed to take first a full breath, and

FIG. 9.



Showing method of compression of lumbar ganglia of the sympathetic.

The solar plexus is at the epigastrium just below the lower end of the sternum. The chief lumbar ganglia are situated on either side of the umbilicus, about two inches from it. Pressure upon these ganglia has a marked stimulating effect, because they send out energetic nerve-impulses into the parts which

then to exhale as completely as possible. This diverts the mind of the patient from the procedure which is being executed and also diminishes the abdominal tension, thus making it less difficult to bring pressure to bear upon the posterior wall of the abdominal cavity. With patients who are extremely

FIG. 10.



Showing digital kneading of colon.

they supply, which include not only the stomach and intestines, but all the abdominal viscera. It should be remembered that these nerve-masses lie beneath the abdominal contents, resting upon the bodies of the vertebræ. Hence, it is necessary to

fat or in whom the abdomen is greatly distended with gas this procedure can only be executed in a very imperfect manner.

The position is a matter of great importance. The shoulders should be slightly raised and the knees

well drawn up, the legs being supported so that the anterior abdominal wall will be relaxed as much as possible. The patient's hands should be by her side, and all the muscles of the body in a state of rest. Only gentle pressure should be employed, and the application continued but two or three seconds at each point. In many cases it will be found that extreme sensitiveness exists at the points indicated, which is evidence of an excited or hyperesthetic state of the abdominal sympathetic. Continuous gentle pressure may be beneficial by setting up a series of vital activities which result in the restoration of the nerve to its normal condition.

Vibration.—(a) Strong vibration applied to the abdominal contents has been shown to be one of the most powerful means of stimulating the nervous reflexes, circulation, glandular activity, and peristalsis. Either one or both hands may be used. The flat palm of the hand is applied to the surface, with the arm extended, and fine vibratory movements are executed in such a manner as to throw the whole abdominal contents into vibration. The same movement, may be beneficially applied to the liver. (b) A more vigorous shaking movement is communicated to the abdominal contents by making intermittent pressure either with one hand, or with one hand reinforced by the other, or by both hands in alternation, the movements being made with sufficient rapidity to produce a decided motion of the abdominal contents. The effect of this procedure is very marked in cases in which the abdominal walls are considerably relaxed. (c) A third method of applying shaking is by placing the palm of the hand upon the abdomen, the arm slightly flexed, then making a rapid rotary movement without allowing the hand to slide upon the surface. The direction of the movement is alternated, half a dozen in one direction, and then an equal number in the opposite direction.

Percussion.—This is unquestionably the most powerful of all the stimulating means which can be applied to the viscera through the abdominal wall. All the different modes of percussion, *viz.*, tapping, spitting, clapping, hacking, and beating may be usefully employed.

Digital Kneading.—(Fig. 10.) Standing face to the patient's feet, with the fingers very slightly flexed, place the finger-tips, the hand being reinforced by the other hand placed above it, upon the abdomen low down upon the right side. Crowd the finger-ends backward, pressing with as much force as possible, without giving the patient inconvenience, against the cecum. Carry the hand upward in the direction of the ascending colon as far as permitted by the ribs. Repeat the movement four or five times. Execute similar movements on the left

side, beginning above instead of below, and pressing the fingers upon the abdominal wall at a point close under the ribs on the left side. Then carry the hand downward, turning toward the median line at the conclusion of the movement so as to follow as closely as possible the course of the sigmoid flexure of the colon.

(To be continued.)

THE MANAGEMENT OF HERNIA IN INFANCY AND CHILDHOOD.¹

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THE importance of understanding the best methods of treating hernia in infancy and childhood is evident when we consider the relative frequency of this affection during the earlier years of life. At the Hospital for Ruptured and Crippled, New York, during the six years from October 1, 1890, to October 1, 1896, there were treated 26,388 cases of hernia. Of these, 6586, one-fourth of the entire number, occurred in children under the age of 14 years. Of 22,362 inguinal herniæ, 5554 occurred in children under 14 years of age; almost exactly one-fourth. Of 21,000 cases of hernia observed at the London Truss Society, 3433 were in infants under the age of 1 year.

I believe that many herniæ observed in youth, and even in adults, are due to lack of treatment or to imperfect treatment during infancy.

Some writers advise against the use of a truss during the first year of life, trusting that Nature will effect a cure, or believing that no harm will result from the delay. Such teaching should be strongly condemned. In this I am in most hearty accord with Mr. Macready, who says, "directly the rupture is discovered the truss should be applied. Some have imagined that very young children cannot wear a spring truss, but this is an error." The experience with the light spring truss in infantile hernia at the Hospital for Ruptured and Crippled entirely agrees with Macready's. I have yet to see an infant, save possible three or four suffering from extreme malnutrition, that could not wear a properly constructed and well-fitting steel truss. Such a truss should cause very light pressure, and should be daily removed to permit of careful washing and cleansing of the parts. I regard the steel truss as much superior to the various substitutes, *e.g.*, the "worsted" truss, and this opinion is based upon a careful trial in a large number of cases.

Duration of Treatment.—It is very difficult to lay

¹ Read before the Section on Pediatrics at the last meeting of the American Medical Association.

down any hard and fast rule as to how long a truss should be worn, but it is safe to say its use should seldom be discontinued until two years have elapsed since the hernia was last observed. The younger the patient when the treatment is begun the shorter the time necessary to effect a cure is true in the majority of cases. If the use of a truss is discontinued too soon relapse is likely to occur, and then a much longer time will be required to effect a cure, if, indeed, it be ever attained. Strangulation, though rare during the first year of life, occasionally occurs and furnishes an additional reason for early treatment. I have operated seven times for strangulated hernia in children under two years of age; three of them under one year.

Umbilical Hernia.—This variety is very common during the period in question, 2043 cases in patients under the age of 14 years having been observed at the Hospital for Ruptured and Crippled during the six years previously referred to. The method of treatment which we have employed as a routine measure consists in placing a simple wooden button, about one inch in diameter and first covered with rubber plaster, directly over the umbilical opening, and fixing it in this position by means of a strip of rubber plaster, two inches wide, which completely encircles the abdomen. This is changed about every ten days, and seldom causes excoriation or undue irritation. Nearly all of these patients with umbilical hernia are cured within a short time by some such simple means of support, and it is extremely rare to find a child who has reached the age of puberty with the hernia persisting. Therefore, it follows that it is bad judgment to advise operative treatment in this class of cases.

Epigastric Hernia.—There are occasionally seen herniæ which closely resemble the umbilical variety, but careful examination makes clear the fact that the hernial opening is not at the site of the umbilicus, but slightly above, or more rarely, on either side of this point. Such herniæ are due to congenital defects in the linea alba, or in the lineæ semilunares, and if the opening is very large, *e.g.*, of a size that will admit the thumb, mechanical treatment will seldom effect a cure, and such cases may very properly be subjected to operation. Out of a total of 565 herniæ in this region in children under 14 years of age, but 19 of this variety were observed during the period previously mentioned.

Femoral Hernia.—This is seldom found in infancy and early childhood. Of 1424 cases of femoral hernia treated at the Hospital for Ruptured and Crippled during the six years referred to, only 43 occurred in patients under the age of 21 years, and but 17 under the age of 14. Macready's tables, compiled from

the records of the London Truss Society, show that out of 1658 cases of femoral hernia only 27 occurred in children under the age of 10 years, and only 5 under the age of 5 years. In other words, out of a total of 21,000 cases of inguinal and femoral hernia, only 5 cases of the femoral variety were observed in children under 5 years of age! I have operated upon 8 cases of femoral hernia in children under the age of 10 years, and 15 under the age of 14 years, the youngest having been a male infant just 2 years of age, with a double femoral hernia of large size. An operation was performed upon both sides with an interval of two weeks between the operations. The sac of the right hernia contained the cecum. This is the only case in which I have found this organ in a femoral hernia.

Treatment of Femoral Hernia.—The mechanical treatment of femoral hernia in infancy and childhood can be dismissed with a few words, as the best authorities admit that it is practically incurable by means of a truss. In regard to this point, Macready states that "femoral hernia so seldom recedes in either sex that it must be deemed incurable. It is well known from pathologic observations that these herniæ become obliterated, but the instances are so few that they give no ground for hope of a favorable issue in general." This fact furnishes a sufficient reason for urging early operative treatment, provided, of course, that it may be shown that such treatment is both safe and effective.

Personally, I have had but one relapse subsequent to operation for femoral hernia, either in children or adults. I have operated upon thirty-eight patients presenting this affection, and the oldest is now well upward of six years. The one case which relapsed, that of an adult, was the only one in which primary union was not obtained. The methods I have employed were two, as follows: (1) A very high ligation of the sac and a closure of the canal by means of a "purse-string" suture of kangaroo tendon. The wound is closed with fine catgut suture, and is not drained. Eight patients were operated upon in this manner. (2) Bassini's operation for femoral hernia was employed in the treatment of the remainder, and consists of a closure of the canal by two layers of interrupted sutures. In this operation I likewise used kangaroo tendon for the buried sutures. A truss was not employed after operation in any of these cases and, in all, the wounds healed by primary union.

Treatment of Inguinal Hernia in Children, and the Probability of Cure from Mechanical Treatment.—It will be at once seen that this is a most important point, for upon it depends the whole question of the operative treatment of hernia in children.

Some excellent surgeons have contended that all cases of hernia in infancy and childhood may be cured by means of a truss. Therefore, they argue, operations for the radical cure of hernia, whatever may be said in their favor in regard to adults, have in children no *raison d'être*. This was the burden of the criticism of my first paper upon the "Operative Treatment of Hernia in Children," published in 1893, and in which I reported 51 cases. This criticism, if well founded, would certainly leave the operation without rational support. Hence, it is worth while to most carefully examine the facts in the case.

I had long believed this opinion against operative procedure in children to be the result, rather of preconceived ideas, than of careful or extensive observation. This belief was strengthened when a thorough search through the literature of hernia failed to discover any data upon which to decide such an all-important question. It, indeed, permits of a fairly accurate solution for when simplified it is resolved into the following: How many adults with hernia had it during infancy or childhood? To aid in answering, I have, with the assistance of Drs. Carl Pfister and A. H. Cilley, analyzed all cases treated at the Hospital for Ruptured and Crippled during the six years from October 1, 1890, to October 1, 1896. During this period 26,388 patients with hernia were treated, and of this number 15,197 were over 21 years of age. The object of my analysis was to determine how many of these adults presented a history of hernia in infancy and childhood. Contrary to the opinion of many that few, if any, such cases exist I found 1360 instances of hernia which had been acquired previous to the age of 20 years; of these 306 had been noticed in early infancy; *i.e.*, soon after birth, or during the first two years of life; in 397 the hernia appeared before the age of 14 years. In other words, in 700 cases the hernia appeared before the age of puberty.

It will be seen in calculating the percentage of herniæ in infancy and childhood which persist until adult life is reached that several difficulties at once arise. The number of individuals with hernia, that, having the hernia previous to the fourteenth year of life will survive to reach maturity must be estimated. For the purpose of a concrete example, suppose we take 100 children with rupture who are under the age of 14 years, how many will be alive when the youngest is 20 years of age? From the most reliable mortuary statistics¹ it may be estimated that less than one-half of the number will be alive at the end of this period. Hence, even if there were no instances of cure we should find but 12½ per cent. of all patients with hernia, present-

ing a history of the same affection during infancy and childhood. Undoubtedly many of the adult patients fail to remember the early history of the hernia, and this fact makes our estimate much too small. Making due allowance for errors, the 700 cases found in our analysis represent, approximately, about 25 to 30 per cent. of the cases in individuals who reached adult life; in other words, nearly one-third of all cases of inguinal hernia in children are not cured by mechanical treatment.

Operation should, I think, seldom be advised in children under the age of four years, because there are very few cases in patients under this age which cannot be controlled by a truss, and furthermore, mechanical treatment cannot be given a fair trial in a much shorter period than this. Out of a total of 430 patients operated upon by myself but ten were under the age of four years. This number does not include six cases in which operation was performed for the relief of strangulation. I do not believe that the operative treatment is entirely devoid of danger in infants and very young children, though the chief menace, I think, lies in the anesthetic.

As to selection of cases I cannot perhaps do better than repeat what I recently stated in a recent report on the "Radical Cure of Hernia:"

"I believe it to be a good rule never to advise operation in children until a truss has been satisfactorily tried for a reasonable time, *e.g.*, one or two years without benefit. There are, however, important exceptions to this rule: (1) In femoral hernia operation may be at once advised; for the reason that the chances of cure by means of a truss are too slight to be considered. (2) Irreducible or adherent omentum (rare in children) and reducible hydrocele may furnish sufficient reason for early operative interference. (3) There are, furthermore, a number of cases, especially in dispensary practice, in which the rupture cannot be satisfactorily retained on account of insufficient care on the part of the parents, and such cases may with profit be subjected to immediate operation."

Dangers Attending Operation.—The operation may be regarded as practically free from risk provided the child is in good health and the operation performed under favorable conditions. The fact that most of the few fatal results have been due to ether-pneumonia shows the importance of paying strict attention to the anesthetic as well as the condition of the child's lungs prior to operation.

Adding together the cases of children operated upon for radical cure by Broca of Paris, 477 cases with 2 deaths; by Felitzet of Paris, 105 cases with 1 death, and by myself, 290 cases with 1 death, we

¹ "Eleventh Census, vol. 4, Vital Statistics."

¹ *Annals of Surgery*, March, 1897.

have a total of 877 cases with 4 deaths, or a mortality of less than one-half of one per cent.

This mortality is lower than any that can be computed from a like number of cases in adults, and the percentage of permanent cures is also larger. In other words, operation in childhood is not only attended with less risk, but it also gives the best results.

Choice of Methods.—The results in my hands following Bassini's operation have been so extremely satisfactory that I confess that I may be somewhat prejudiced in its favor, and hence unconsciously do injustice to some of the other methods. When once the principles of Bassini's method are clearly understood and the surgeon has become familiar with the technic the operation becomes a very simple one, and may be easily performed within from fifteen to twenty minutes. In employing this method in children greater care must be exercised than in adults in order to avoid damaging the delicate structures of the cord and sac. As yet, I have never injured the cord either in children or adults.

The necessity of transplanting the cord in operations for the cure of hernia cannot yet be regarded as definitely settled, though no surgeon has been able to show as brilliant results by any other method. Dr. Bull and myself have operated upon a small number of cases using exactly the same technic as in the Bassini operation, except that the cord was not transplanted. These cases have remained well with few exceptions; some of them upwards of four years. The number of cases is hardly sufficient to justify a comparison with the results following Bassini's operation. The only advantage which might be urged in behalf of this method is the fact that it is more simple and that less time is required in its performance. These are somewhat doubtful advantages since the difference in time would probably not be more than one or two minutes. The sac cannot be properly isolated without at the same time freeing the cord sufficiently to perform Bassini's operation, so that it makes little difference as regards time whether the sac be placed above or below the deep layer of sutures. Personally, I am inclined to regard the transplantation of the cord an important element in the success of the operation. There are a few practical points in Bassini's method which I think of great value: One is to at once stop all bleeding, so that the field of the operation may be perfectly clear; all of the layers of muscle and fascia should be as easily demonstrable as in a dissection on the cadaver. If the tissues become stained with blood the sac is separated with difficulty, and the bruising resulting from prolonged manipulation greatly diminishes the chances of securing primary

union. Another point upon which I lay much stress is never to cut any of the muscular fibers (external or internal oblique) in opening the canal. In this operation the aponeurosis of the external oblique is slit up above the internal ring, but I exercise great care not to cut any of the underlying muscles. Many surgeons freely cut these structures. The cut edges retract, and they can never become accurately adjusted or thoroughly united. The cutting is entirely unnecessary, as gentle stretching with the fingers is sufficient to open the canal to the desired extent. The substitution of the kangaroo tendon for silk in the buried sutures (Bassini himself uses silk), I believe, has been a distinct gain, and to this I attribute the very large percentage of primary union in my cases, as well as the improvement in ultimate results.

Final Results.—With the assistance of Drs. Jaegen, Thompson, and Ledlie I have been able to trace all but ten of the 285 patients operated upon.

Of my 290 patients under 14 years of age who were operated upon, Bassini's method was employed in 257; of these all but 8 have been traced with the following results:

2 were sound after.....	5 years
15 " " "	4 to 5 "
23 " " "	3 to 4 "
50 " " "	2 to 3 "
76 " " "	1 to 2 "
35 " " "	$\frac{1}{2}$ to 1 "
41 " " "	1 to 6 months
2 relapsed	
1 died six days after operation of pneumonia.	
4 died of various diseases within from a few months to a year after operation; perfectly sound as regards the rupture at the time of death	
8 were not traced.....	

Total, 257 cases; 166 continued well more than a year.

Of the two relapses one was following the first Bassini operation I had performed in children. The hernia was very large, and the operation imperfectly done, and moreover, this was the only case in which silk was used for buried sutures. Extensive suppuration followed, and relapse occurred within four months. In the other case the relapse occurred nearly one year after operation, and was due to the tearing apart of Poupart's ligament.

Of the 33 patients remaining, 13 had *inguinal hernia*, and were operated upon without transplanting the cord, the technic otherwise being practically the same as in Bassini's method. Of these 13 patients, 11 were traced; 4 relapsed, 2 were well after 5 years, 3 remained well after 4 years, and 2 after 2 years.

Fifteen patients had *femoral hernia*, of which 14

have been traced with the following results: No relapses:

1 well after.....	5½ years
2 " "	4 "
3 " "	2 "
4 " "	1-2 "
4 " "	less than 1 year

Umbilical and Ventral; 5 cases.

Of these 2 were not traced, 2 relapsed after operation, and 1 was reported well after 2 years.

Summary of Results:

Bassini's method: 257 cases; 249 traced; 1 death (pneumonia).....	2 relapses
Cord not transplanted 13 cases; 11 traced; 4 "	
Femoral 15 " 14 " no "	
Umbilical and ventral 5 " 3 " 2 "	

In compiling these statistics 20 cases have been added in which operation was performed between June 1st and October 1, 1897. It has been stated by some writers, especially by Kocher, that operations upon children do not afford a good test of the value of Bassini's method. I will simply say that in my cases in patients over fourteen years of age, 150 in number, this method was most frequently employed, and the results were almost if not quite as good as in children; there was no mortality and but two relapses.

CLINICAL MEMORANDA.

CASES OF PARALYSIS OF SOME OF THE OCULAR MUSCLES.

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THE following cases of paralysis of some of the ocular muscles, taken from my private records and from those of the Ophthalmic Department of the Jefferson Medical College Hospital (service of Dr. Geo. E. de Schweinitz), are reported, not because of any unique features in their symptomatology but because they are fairly illustrative of some of the causes which occasionally give rise to this condition and of the means adopted for its relief.

CASE I. *Oculomotor Paralysis Associated with the Appearance of the Menstrual Function.*—H. S., female, aged fifteen years, was referred to me by Dr. A. F. Allman, under whose care she had been during a short time only, for partial left oculomotor paralysis, which had existed fourteen months. At the time of my examination, the eyeball was turned outward and downward and the greatest exertion failed to move it in the slightest degree upward or inward. The lids had been entirely closed during the first few weeks after the appearance of the paralysis. The upper lid could be elevated about one-third of the usual distance. There had also been moderate dilatation of the pupil and paralysis of accommodation, but both had regained their normal

condition. Diplopia and the altered carriage of the head was still present. A high compound hypermetropic astigmatism existed, for which she was wearing proper correcting lenses.

The paralysis came on very gradually, about five days elapsing between the first appearance of diplopia and the complete loss of accommodation and drooping of the upper lid. Two weeks after the beginning of the ocular symptoms, menstruation appeared for the first time and was exceedingly scant in quantity, the patient having been in ill health (presumably on this account) for four weeks. Rapidly increasing doses of potassium iodid, and later, galvanism, strychnin, and pilocarpin were administered. Under this treatment the lid regained most of its power and some of the strength of the ocular muscles returned, but not enough to do away with the diplopia and the disfiguring squint. Orthoptic exercises were faithfully employed and during several weeks the patient wore a shield over the unaffected eye, thus compelling the use of the paralyzed eye, but no improvement was observed from either of these measures.

It was then thought best to attempt some operative procedure, one and one-half years having elapsed since the beginning of the paralysis, and the chances of improvement being fairly stated, the advice was accepted. A 20° prism, with the base toward the nose, over the right eye, and a 33° prism, with the base upward, before the left eye were required to produce single vision. The external rectus muscle of the affected eye was first divided, and this correcting only a small amount of the deviation, tenotomy of the external rectus of the right or unaffected eye was next performed. After healing, there were required, to fuse the images, a 2° prism, with the base inward, over the right eye, and a 20° prism, with the base upward, over the left eye. The inferior rectus of the left eye and the superior rectus of the right eye were next divided at different sittings. The result is even better than had been anticipated as the eyes are now straight and the diplopia entirely relieved for the central portion of the field, though the poretic muscles are, to be sure, somewhat deficient in power.

CASE II. *Paralysis of the External Rectus Produced by Exposure to the Weather.*—A. C., female, aged forty-two years, presented herself at the Jefferson Medical College Hospital complaining of double vision which had been present eight weeks. A previous attack of diplopia had occurred two years before and after a few weeks had disappeared without treatment. On this account she had failed to seek advice for the present condition until it had existed eight weeks.

There was marked diplopia, with altered carriage of the head, false projection of images and a slight convergent strabismus which increased somewhat when the patient became excited. Specific history was denied, but formerly there had been excessive use of alcohol and of snuff. Two days before the present attack she had been exposed for a long time to the weather, the day being cold and rainy. This exposure seems to have been the undoubted exciting cause of the paralysis, probably giving rise to an exudate which pressed upon the sixth nerve

somewhere in its course between its exit from the base of the brain and entrance into the muscle.

The paralysis entirely disappeared under the administration of rapidly increasing doses of potassium iodid.

CASE III. Congenital Paralysis of the External Rectus.—C. T., male, aged forty-six years, complained of inability to turn his left eye outward beyond the median line, a condition which had existed since birth. Diplopia had never been observed and there was no altered carriage of the head or false projection of images. There was, however, a marked deficiency in the converging power, the eye rotating not more than 15° inward. The inward movement of the right eye was also somewhat impaired. The visual acuity was normal and there were no lesions of the fundus.

It is impossible to determine by examination during life the exact cause of the trouble in these cases. In the present instance there may have been some affection of the nucleus of the nerve during intra-uterine life, or an anomalous insertion of the muscle into the sclera, or even the absence of the muscle itself.

CASE IV. Traumatic Paralysis of the Superior Rectus.—M. B., a widow, aged twenty-one years, fell against the corner of a mantel, striking the left eye through the closed lids. There was considerable pain, but this wearing off after a short time she thought no more of the accident. A few hours later, however, she noticed that she saw double. The diplopia continued to grow worse and she was annoyed very much by the false projection of the images and continued dizziness during attempted employment of the eyes. This condition continuing for a week she presented herself for advice.

Examination showed a slight discoloration of the upper lid where it had been bruised. The upward movement of the left eye extended but a short distance above the normal level of the eyes when looking directly in front. Diplopia began as the test object was brought near this level, was crossed, the image seen with the left eye being somewhat higher than that seen with the right, and the lower end of the false image was slightly inclined toward the real image.

The same treatment as described in the other cases was employed, but after several months there remained a slight vertical diplopia, for which the patient is now wearing with absolute comfort a 5° prism divided between the two eyes.

The patient evidently had had a small hemorrhage somewhere along the orbital portion of that filament of the third nerve supplying the superior rectus muscle which was not entirely absorbed, or which being absorbed, left its impress, as it were, upon the nerve fibers so that they could not regain their original power of transmission.

CASE V. Oculomotor Paralysis Appearing During an Attack of Influenza.—A. H., female, aged sixty-five years. The patient first noticed diplopia and drooping of the upper lid of the right eye on the third day after the beginning of an attack of influenza. Three days later the ptosis was complete, and the external ocular muscles supplied by the third nerve were completely paralyzed. The accommodation of the eye was unaffected. Upon ele-

vating the upper lid of this eye, marked divergent strabismus was observed. The same treatment employed in the other cases was used. As the patient was brought to the hospital for consultation only, remaining under the care of the family physician, no subsequent history was obtained.

A CASE OF DOUBLE HARE-LIP.

By JOHN A. WYETH, M.D.,
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THE child whose pictures accompany this article was brought to me when three months of age. He presented an extremely bad form of double hare-lip with complete cleft of the bony and soft palate. The vomer was unnaturally long, and the premaxillary bone, which pro-

FIG. 1.



Showing appearance of child previous to operation.

jected from the end of the vomer was covered by a little peninsular of integument which was continuous with the end of the nose, to which it was attached by a small pedicle.

FIG. 2.



Showing appearance of child just after the operation, as well as silk-worm-gut anchor.

As it was impossible to save the premaxillary bone and carry it into a position to complete or perfect the anterior

arch of the alveolus, I removed this bony process, taking great care to dissect up and preserve the little particle of integument covering it, which I used in making the septum of the nose.

It was also necessary to cut away about one-half inch of the vomer, which being done, I was enabled to so fashion the lip on either side of the fissure that by free dissection of the tissues from the maxillæ the denuded edges were brought together, as shown in Figs. 3. Silkworm-gut sutures were used, as well as the silkworm-gut anchor,

FIG. 3.



Showing appearance of child two weeks after the operation.

Fig. 2, which I employ in all these operations. This feature of the method is, in my opinion, essential to success.

The sutures were removed on the tenth day and the child recovered without any interruption. The interval between the pictures Nos. 1 and 3 was two weeks.

HOSPITAL REPORT.

TREATMENT OF TYPHOID FEVER IN ROOSEVELT HOSPITAL,

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FOR a number of years my autumn service at the Roosevelt Hospital has included the months of September and October, the time during which typhoid fever is most prevalent in New York City. An exception, however, must be recorded for this year, 1897, as the patients with typhoid fever admitted during the months mentioned were but half the usual number.

In discussing the various modes of treatment recommended for this affection, it is too often the custom to rely upon the mortality percentage as affording the chief indication of the success of the method employed. In hospitals, however, this may be quite misleading; because, if the course of this prolonged fever can be advantageously modified by any particular line of treatment, then the earlier it can be resorted to in each individual case the better will be the result. In hospitals a large

proportion of the patients are not admitted until after they have been ill for a considerable time, and are then brought to the institution as a last resort. Under such circumstances it is plain that the rate of mortality would scarcely afford a fair criterion of the efficacy, or the reverse, of any form of treatment.

A much more trustworthy indication as regards the effects of treatment in a hospital is the actual percentage, in the non-fatal cases in a given series, of the occurrence of certain prominent symptoms which are characteristic of the course of typhoid fever, either when left to itself or when treated more or less according to what may be termed the expectant method. In the following observations I have, therefore, selected for comparison the percentage, among 69 patients who recovered from typhoid fever, of the occurrence of diarrhea, tympanites, delirium, and hemorrhage: The total number of patients with this disease admitted to my wards during September and October of 1895, 1896, and 1897 was 75, of whom 6 died, or 8 per cent. An analysis, however, of the histories of these fatal cases shows how little they can be considered as regards the question of treatment.

Of the total number, 50 cases occurred in males and 21 in females. Of the males, the youngest was 7 years old, the oldest 57; 4 patients were under 10 years of age, 15 between 10 and 20, 33 between 20 and 30, 21 between 30 and 40, and but 2 were over 40 years of age.

Diarrhea.—Among the 69 cases in which recovery occurred diarrhea was present on admission to a marked degree in 13, and moderately so in 2. In all of these cases it ceased within a week, except in one, that of a woman, in whom it continued until the fortieth day. Subsequent to admission diarrhea occurred in 5, but was moderate in each, and ceased within from three to five days. Hence, in a total of 69 cases, only 5, or 7 per cent., had any looseness of the bowels after beginning treatment, and none required special medication for it.

Tympanites.—This was present on admission in 11. In each it disappeared within five days after beginning treatment, except in one case, in which it continued nine days. In one case, admitted on the sixth day of the disease, it developed moderately two days later, coincident with a high temperature, and then ceased within five days. Thus, out of 69 patients, there was only 1 who developed this symptom after admission.

Delirium.—This symptom was noted in 11 patients, but of these, 9 were delirious on admission. The remaining 2 had delirium after beginning treatment, and it is significant that in each of these it was present only while the use of the cold bath had to be omitted, owing to the occurrence of intestinal hemorrhage. In each it was very moderate, and did not last a week. Of the 9 patients who were delirious on admission, in only 1 case did this symptom continue ten days after treatment was begun. Therefore, out of the total of 69 patients, only 2 became delirious in the hospital, and 58 did not have delirium at all.

Hemorrhage occurred in 4 cases, and in 1 was fairly severe. One of these patients was admitted on the four-

teenth, and 1 on the twenty-first day of the fever. In the first it occurred on the nineteenth and twentieth days, and in the second on the twenty-third and twenty-fourth days of the fever.

Relapses occurred in 5 out of the total of 69 cases.

I think that this showing indicates that the course of this disease was materially altered by the manner in which its common functional derangements were either prevented, or else soon controlled when already present when the treatment was begun; for as just stated, after treatment was started, there were only 5 cases of diarrhea, in each of which it was very temporary, 1 case of moderate tympanitis, and 2 of transient delirium. Similar statistics of the course of typhoid fever under treatment might be collated from the Roosevelt Hospital records for a number of years past, so that the occurrence of such symptoms as sordes, dark, dry tongue, meteorism, diarrhea, delirium, or subsultus tendinum, were but rarely seen, except when already present at the time the patients were admitted to the hospital.

The clinical histories of the 6 patients who died are briefly as follows:

CASE I.—Male, aged seventeen years, admitted on the eighth day of the disease; temperature, 104° F.; pulse, 108; respiration, 36; persistent vomiting. The continued frequency of respirations and the early hyperpyrexia present in this case led to suspicions of pneumonia, but no physical signs of this affection were discoverable until eight days after admission, when consolidation suddenly developed at the base of both lungs, and he died on the following day; no autopsy. This clearly seemed a case of mixed infection from the first.

CASE II.—Male, aged thirty-two years, admitted on the tenth day of the disease; very delirious; temperature, 105.4° F.; pulse, 116; respiration, 28. He became rational nine days after admission, and seemed to be convalescing, when, according to the rule to administer the cold bath on the temperature reaching 103° F. he was having his single daily bath, he suddenly died on being transferred to his bed. Death occurred on the eleventh day after admission. Autopsy showed the intestinal ulcers to be nearly healed, and no other lesion was discovered to account for the fatal issue, which, therefore, may have been due to syncope.

CASE III.—Male, admitted on the eleventh day of the disease, with a very weak pulse, great tympanites, and continuous diarrhea until death which occurred on the sixth day after admission. The peculiarity in this case was that at the autopsy extensive ulcers were found in the large intestine, but none whatever above the ileocecal valve.

CASE IV.—Male, aged thirty-five years, admitted on the sixteenth day, with high temperature, rapid pulse, and noisy delirium. He died on the eighth day after admission.

CASE V.—Male, admitted on the twenty-first day; very delirious, and lived but two days.

CASE VI.—Male, aged thirty-three years, presented a history of having been a hard drinker. His urine was albuminous, with numerous granular casts, and he was threatened with gangrene of the left leg from thrombosis. He finally succumbed with pneumonia and car-

diac symptoms. At the autopsy, besides the intestinal ulcers, evidences of recent endocarditis, bronchopneumonia, and chronic nephritis were found.

Treatment.—The treatment adopted at the Roosevelt Hospital is as follows:

If a patient be admitted before the end of the second week of the disease, 5 grains of calomel and 35 grains of compound jalap powder are administered on three successive nights. The effect of this measure in securing intestinal antiseptics is almost invariable. The temperature drops from one to three degrees on the day following the first dose, and if diarrhea be present, this seems to be the quickest and most effectual means of arresting it. After the eighteenth day of the disease the calomel treatment is omitted on account of the liability, after this time, of intestinal hemorrhage.

The next therapeutic measure is directed to the prevention of tympanitis and pea-soup diarrhea. It seems to me that typhoid fever is too exclusively regarded as an intestinal affection, when in reality the stomach is almost as much affected, with the result that its peptogenic power is more reduced, as Fenwick has shown, in this disease than in any other affection, acute or chronic. In fermentation of the gastric contents begins a disorder which soon results in meteorism and diarrhea. I have therefore, during many years, prescribed 10 grains of saccharated pepsin with 10 grains of carbonate of bismuth to be taken every three hours, making 80 grains of each in the twenty-four hours. The result has been that tympanitis rarely supervenes. Bismuth is the most effective and least irritating of the intestinal antiseptics. If the diarrhea persists it is my custom to double the dose of bismuth. Whenever the tongue begins to be dry at the tip, 15 minims of the oil of turpentine is given in emulsion every six hours. Moderate doses of strychnin and caffeine are sometimes administered for symptoms of cardiac debility, but never digitalis. The compound spirit of sulphuric ether (3i in camphor water) seems the best remedy for restlessness with prostration. Alcoholic stimulants are also employed according to the usual rules.

Owing to the extremely reduced condition of the digestive power, milk, the only diet allowed, is always diluted one-half with lime water, the latter being an antiseptic as well as a diluent.

The cold bath is resorted to as soon as the temperature is above 103° F. The patient is actively rubbed while in the bath, and taken out when the temperature falls to 101° F. It should be emphasized that the cold bath is beneficial in this fever, not simply as an antipyretic, but as an eliminative through the kidneys. The symptoms of this fever are those of toxemia, and the powerful effects of the Brand method in increasing the toxic coefficient of the urine have been amply demonstrated.

MEDICAL PROGRESS.

Present Status of Infant-feeding.—HOLT (*Archives of Pediatrics*, November, 1897) finds that all authorities are agreed upon the following points: (1) Good breast-milk is the best infant food. (2) No substitute for breast-milk

can be trusted which does not furnish essentially the same elements, fat, sugar, proteids, etc. (3) These elements are found only in the milk of other animals, cow's milk being the only one available for general use. (4) Cow's milk requires some modification before it is fed to infants; first, because the proportions of the different elements (fat, sugar, etc.) are not the same as in breast-milk; and second, because some of these elements, notably the proteids, are not identical with those of breast-milk.

Other important questions in connection with infant-feeding are still in dispute. Thus the question of milk sterilization is not agreed upon by all. Holt thinks that milk which is sterilized thirty, sixty, or even ninety minutes at a temperature of 212° F. is not unfitted for infantile digestion. As the keeping qualities are greatly increased thereby, no doubt sterilization and Pasteurization will continue to be used, although the aim ought to be to produce perfectly clean milk, thus rendering sterilization unnecessary. Of infant foods and condensed milk he has little good to say.¹ Within the past few years he has seen nearly twenty cases of scurvy in children who were fed exclusively upon some one of the various patented infant's foods. Those which require the addition of fresh cow's milk are naturally better than those which are not to be mixed with milk. If a food contains a large amount of unchanged starch it is successful in inverse proportion to the amount used. It may serve a useful purpose as a diluent of the milk, and not affect the nutrition of the child one way or the other. Great gain has been made by the establishment of milk laboratories, and by the prevailing accurate knowledge in respect to milk modification. It remains to be seen whether the minute fractions of percentage of the different elements upon which some writers have insisted are really necessary, and whether equally good results may not be obtained with approximate proportions of fats, proteids, etc. The field of infant-feeding is by no means exhausted and will repay anyone who will devote time to its study.

Tuberculosis from Butter.—GRONIG (*Centralbl. für Gynäk.*, September 30, 1897) examined 17 vessels of butter and injected portions of the butter into 51 guinea-pigs. The result was that 11 of the guinea-pigs were found, *post-mortem*, to present the pathologic appearances of tuberculosis. Of these 17 specimens of butter 8 produced tuberculosis. Unfortunately the diagnosis was not confirmed by culture, inoculation experiment, nor was a histologic examination made to determine the character of the lesions.

OBERMULLER examined 14 specimens of butter, injecting 5 or 6 animals with them, and found tubercle bacilli in every case. Here again, neither culture nor inoculation experiments were made to control the diagnosis. It is only fair to state that in this case all the specimens of butter were obtained from the same source, and one which had previously been determined by the milk supply to be tuberculous.

RABINOWITSCH examined eighty specimens of butter from various sources, and in no instance were tubercle bacilli found.

PETRI says he has tested one hundred samples of butter, and found tubercle bacilli in thirty per cent. of them. In sixty per cent. of all the samples he found bacilli which might easily be confounded with tubercle bacilli. The question evidently requires further investigation.

The Use of the Phonendoscope in Surgery.—VAN ARSDALE (*N. Y. Polyclinic*, August 15, 1897) praises the use of the phonendoscope in surgical diagnosis. In the case of a broken bone, over which a scratching noise is made, the instrument will detect the difference of such a noise from one made over a bone which is uninjured; as, when a fracture is present, the break in the bone obstructs the passage of sound, and again, the presence of soft tissue between the ends of a broken bone may be detected in the same manner. He has found this instrument to be of great value in the study of aneurism, in the diagnosis of the extent of tumors the density of which is different from that of surrounding tissues, in the detection of the presence of small quantities of fluids in the joints, and especially in the diagnosis of abdominal tumors. He employs a phonendoscope which is fitted with a pin so that the sound is received upon a very small point. The ease with which the colon and intestines may be located and traced appears to be one of the great advantages of the use of this instrument. By means of different notes transmitted through it the author was enabled to locate a growth of the colon which could not be detected by the ordinary methods.

THERAPEUTIC NOTES.

Palpitation of the Heart.—HUCHARD (*Wien. Med. Blät.*, July 15, 1897) for purposes of treatment divides cases of palpitation of the heart into those varieties which are, and those which are not, benefited by cardiac stimulants. Those cases arising from the ingestion of poisons, coffee, tobacco, and drugs, such as sulphate of quinin, are usually relieved by a removal of the cause. Palpitation due to gastro-intestinal disturbance, usually occurs at night, and is associated with dyspepsia and hyperacidity. For the most part these attacks may be cured by large doses of alkalies, and regulation of the diet. Iron, if taken in too large quantities, may also produce palpitation.

There is no necessary connection between cardiac palpitation and cardiac disease. The diseases usually accompanied by palpitation, and which are improved by digitalis and similar remedies are beginning aortitis, acute endocarditis and pericarditis, adhesions of the pericardium, and mitral insufficiency. In such cases the following prescription will often be found useful:

R	Quiniae hydrobrom.	.	.	.	gr. lx
	Digitalis	.	.	.	gr. xxx
	Ext. convallariæ	.	.	.	gr. xxx.
	M. Ft. pil. No. xl.				

Sig. Two to four pills daily.

For Infantile Constipation.—CARRIERE (*Bull. Gen. de Therapeut.*, August 20, 1897), in speaking of infantile constipation, says that the alimentation should first be attended to. If the child is on the breast, the number of nursings is probably at fault; or, it may be necessary to prescribe

exercise for the mother. At the period of weaning arrow-root and other preparations of a somewhat laxative character will be of service. A little soup, preferably that of chicken, with tapioca, or bits of bread, may also be given. In other cases, massage, laxatives, or suppositories may be employed. Massage is practised as follows: Every morning the palm of the hand is oiled with vaselin, and with it circular motions are made around the umbilicus, beginning in the right iliac fossa. The pressure should be light, and the whole treatment should not exceed ten minutes. After the first year the massage should follow the course of the large intestine. As laxatives, the author recommends castor oil and magnesia. In order to secure an immediate evacuation injections or suppositories may be used. Injections should not be larger than 2 ounces during the first six months, and 4 ounces after the first year. Boiled water, a weak solution of camomile, or water with a spoonful of oil of sweet almonds may be used.

The Treatment of Burns.—WERNER (*Phila. Polyclinic*, October 30, 1897) advises the following simple and at the same time rational rules for the treatment of burns of the third degree: (1) Place the burned member or surface in a carbolized bath of from two to five per cent., depending upon the age of the patient and the extent of the injured surface. A threefold effect is gained by this, *viz.*, antiseptis, aseptis, anesthesia. (2) Remove all the carbolie solution by a second bath in a physiologic saline solution. (3) Dust the entire surface with a powder containing acetanilid (1 part) and compound stearate of zinc (5 parts). (4) Cover the surface with narrow strips of Lister's green protective, or, if economy must be studied, with thin gutta-percha tissue. (5) Place ten to twenty thicknesses of wet sublimated gauze over and around the surface, and bandage.

The dressings should be changed as often as necessary. The advantages of this treatment over that by lotions, oils, and salves, are freedom from any accumulation of fats or dead epithelium, encouragement and protection of the new epithelium, and finally, almost the entire absence of fibrous tissue in the cicatrix, and avoidance, therefore, of resulting deformities.

A Treatment of Uterine Colic.—AUDERBERT (*Bull. Gen. de Therapeut.*, August 23, 1897) objects to the customary treatment of uterine colic by means of ergot or intra-uterine injections. Both methods are ineffectual and may be dangerous. As a curative treatment tincture of opium in 15-drop doses per rectum is most to be recommended. This usually succeeds in relieving the colic, but of course it is a little constipating, to avoid which chloral, bromid of potassium, or antipyrin may be substituted. The extract of viburnum prunifolium, either alone or in combination, possesses a marked sedative action. Twenty drops of the following mixture may be given every two hours in a warm drink:

℞ Ext. viburn. prun. fl. }
Ext. hydrast. canad. fl. } aa . 3 iv — m.

If the colic is due to fecal or urinary retention the

bladder and rectum should first be evacuated, and then, between the pains pressure should be made upon the uterus to facilitate the expulsion of clots. Vaginal injections at a temperature of 115°–120° F. act in the same manner. If these measures are not successful in emptying the uterus intra-uterine injections may be employed with care and a low pressure. On account of their danger they should only be used when other remedies have failed.

Nervous Vomiting.—MEISL (*Ther. Woch.*, September 19, 1897) says that nervous vomiting produced by disturbances of the nervous system, both central and peripheral, without external irritation or anatomic lesion, is a purely functional disorder; it occurs without any over-exertion and is independent of the quality and quantity of the ingested food. It varies in relation to the different kinds of diet, and is often absent when particles difficult of digestion have been eaten, and may be present when only suitable food has been taken. For treatment he recommends the following:

℞ Menthol gr. i
Sodii bicarb. gr. c.

M. Ft. in caps. No. xii. Sig. One capsule three times a day.

In severe cases it may be necessary to give suppositories, each containing $\frac{1}{2}$ grain of belladonna and $\frac{1}{2}$ grain of codein. Oxalate of cerium, preparations of bismuth, and alkalies in large doses are also recommended. In the painful form papayotin renders good service. It is given in combination with soda. With some patients the painting of the pharynx with a ten-per-cent. solution of cocain results in a cure. Treatment directed to the strengthening of the body will be of help in all instances.

The Treatment of Whooping-cough.—WERTHEIMER (*Ther. Monatshefte*, September, 1897) lays great stress on the dietetic and hygienic treatment of this disease. He objects to the use of morphin, because if given in doses sufficient to have any effect it leads to a retention of secretion in the lungs which may result disastrously. Bromoform has proved valueless in his hands. He has seldom used quinin. He advises, however, a mixture of belladonna and ammonia bromid, as follows:

℞ Ammonii bromidi gr. xviii
Ext. belladonnæ gr. ⅔

Div. in chart. No. xii. Sig. One to three powders daily.

He especially recommends the use of antipyrin in doses of $\frac{1}{2}$ grain for children under one year of age. It should be ascertained that the kidneys are sound before this drug is administered. In order to enable the child to get rid of the thick mucus, alkaline mineral waters should be given during the course of the disease. There is no such thing as reliable local treatment. This writer finds that children under one year of age have whooping-cough as frequently as older children, and that in them it is more dangerous.

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SATURDAY, DECEMBER 18, 1897.

THE PRESIDENT'S MESSAGE TO CONGRESS AND NATIONAL QUARANTINE.

THE President in his Message, and the Secretary of the Treasury in his annual report, show a lively appreciation of the defects of our quarantine laws. Both recognize that their inefficiency is due to lack of uniformity and cooperation.

The Secretary recommends that the law of 1893 be amended so that National quarantine regulations shall everywhere prevail, and that local interference with them shall be impossible. This law should also be so amended that the Secretary of the Treasury may promptly establish a quarantine station whenever or wherever public safety demands it, without regard to State or local establishments or authorities.

The President sees in the Marine Hospital Service the proper agent for putting these ideas into effect, and recommends that its powers be sufficiently enlarged to accomplish these ends, *viz.*: that the functions of National quarantine and the supervision of the Public Health be delegated to the Marine Hospital Service.

Insecure tenure of office is a serious, if not fatal, weakness of State or local quarantine. Subject to political changes, or even hasty popular whims,

how can any one expect that officials, under such circumstances, will be thoroughly efficient.

The defects of this system have just been glaringly demonstrated in Louisiana, where the officers of the State Board of Health, probably as efficient as any, have been compelled to resign by an outburst of popular clamor.

Quibble as they may over invasions of State rights, it is about time for the people to perceive that, in some matters, Federal authority must be supreme, and one of these is the protection of the country from alien disease and the management of epidemics when such occur. If to these powers could be added authority to compel municipalities to adopt modern sanitation, the situation would be quite ideal.

SIX-DAY BICYCLE RACES.

"THE six men whose brains have given away to this terrible strain are among the leaders in the van, and it is the efforts that they have put forth to hold their coveted positions which have cost them their sanity. These men are fit for little else than a ward in a lunatic asylum."

This is quoted from an evening newspaper's description of the closing scenes of a six-day bicycle race that has just been held in the most civilized center of the Western Hemisphere. It furnishes food for serious reflection. That a people who decry cock fighting, dog fighting, and even "ratting" for amusement, and who are horrified beyond expression and tolerance at the thought of an encounter between a toreador, a few banderilleros and a bull, should permit one of the most harrowing spectacles than can be imagined to continue without protest, or indeed refrain from taking matters into their own hands and stopping it *tour de force* is cause for wonderment.

The physiologic and psychic incidents of the race have a lively interest for the alienist who sees in it the corroboration of an experiment in the artificial production of insanity made some time ago by Mendel of Berlin. This savant showed that if animals, rabbits let us say, were placed on a flat surface, and the surface caused to rotate continuously a number of times per minute during a few days, the animals would develop all the physical manifestations of general paresis. The experiment as performed

by Mendel had serious limitations which heretofore have seemed impossible to overcome, but now the winners in a six-day bicycle race have lent themselves to a repetition of the experiment, and the results may be utilized to corroborate Mendel's statements. In reality, going around the short circular track in the Madison Square Garden is practically the same as being whirled on a revolving table, save that there is added thereto the element of physical effort and consequent physical exhaustion. It is interesting, therefore, to note the symptoms of disordered mind which have been engendered in the six men who have been adjudged insane by the secular press. These symptoms seem to be irascibility, unamenability to suggestion and control of "keepers and trainers," visual and auditory hallucinations, delusions of persecution, and of being poisoned, fighting mania and dementia. One man's mind is "a complete blank." It is difficult "to restrain another from getting over into the boxes and attacking the spectators." Aside from the fact that the latter richly deserve the most summary punishment which could possibly be inflicted upon them for being present at such a disgraceful exhibition, it is to be noted that it was not this laudable object that prompted the rider to belligerency, but a conviction that those in the boxes were persecuting and conspiring against him.

We have not been sufficiently apprised of the physical signs which the participants showed to guide us in making a differential diagnosis, or even a diagnosis at all of the riders' insanity, although tremor, incoordination, and a degree of motor paresis seem to have been among them. Acute confusional insanity caused by exhaustion and rotation seems to approach nearest the mark.

Fully realizing the futility of words to prevent a repetition of one of the most disgusting, demoralizing, and pernicious contests parading in the guise of "sport" known to humanity, we are inclined to propose a plan which, if put in operation, will quickly terminate it. When the time for the next yearly exhibition comes around, let it be made known that a certain number of contestants are to be entered with a view of determining, by a commission appointed for that purpose, how quickly the sanity of the riders can be overthrown, and the form that the alienation which it produces assumes. In other words, let us have a vivisection experiment

on a colossal scale, without anesthetics, and with human beings for subjects. In order to insure the realization of the success of the experiment, we would suggest that the track be shortened, to make a greater number of laps to the mile, not with dishonest intent, as it is alleged was the case this time, so that new records might be established, and the necessary impetus given to promoters to get up a new "contest," but that the experiment may parallel more closely that of the Berlin professor. It might be advisable, moreover, to utilize the center space enclosed by the track by setting up a number of tables, revolved by machinery, on which the same number of men as there are bicyclists may be strapped and revolved as many hours per day as their fellow-victims are kept on their wheels. Then the two sets of mentally dethroned beings may be contrasted and compared, and thereafter the most fatal form of "sport" enjoyed more fully.

We feel convinced that one trial of this will so eradicate six-day bicycle races from the program of sports that they cannot be resuscitated as long as the memory of the present generation continues.

THE NEW YORK BOARD OF HEALTH AND PULMONARY TUBERCULOSIS.

THE history of the movement which led the New York Board of Health to classify pulmonary tuberculosis among the communicable diseases, and to render compulsory the report of instances of this affection occurring in private and public practice, was reviewed in *THE MEDICAL NEWS* of February 20, 1897. A few weeks later, *THE NEWS* took occasion to defend the action of the Health Board in its effort to limit the spread of this most ravaging of all human diseases, and to urge upon the profession the desirability and the necessity of sustaining the Board in its work against the common enemy. At this time, when a committee of the Medical Society of the County of New York is considering the legality of much of the work in which the Board of Health is engaged, and when the Board of Estimate has allowed the Health Board \$60,000 for its care of consumptives for the year 1898, the special report to the Mayor, reviewing the history of its action in relation to tuberculosis of the lungs, is interesting and instructive.

Sanitary authorities and bacteriologists, as well as clinicians, have held during some years that the

transmission of pulmonary tuberculosis is by means of the sputum, which, becoming dried after expectoration, circulates as dust. Though there are a few dissenters from this view, we will assume, *causa loquendi*, that this is a scientific truth. It must be further agreed that the danger of close association with consumptives lies mainly in the improper disposal of the expectorated matter, by allowing it to become circulated in the atmosphere rather than destroyed by means of incineration, the use of antiseptics, or by boiling it or the material in which it is contained. In its report the Board of Health announces that it is on the premises above deduced that its action in relation to tuberculosis is based. It substantiates this position by the authority of its pathologists, consulting pathologists, and by numerous citations from French, American, and German writers of eminence. It proves beyond cavil that the position it has assumed as to the manner of the extension of phthisis is scientifically correct, and in doing this it has overcome possible prejudice by deducing incontrovertible evidence from several sources outside of its own bureau. The next logical step in the process consists in proving that, with proper assistance on the part of practising physicians, pulmonary tuberculosis can be stamped out or exceedingly limited. We learn from the report that since the Board of Health has investigated the reported cases of consumption (1893 to 1896), the death-rate from tuberculous diseases has decreased 12.8 per cent., and that from phthisis alone 11.3 per cent. That this is not mere coincidence is proven by a perusal of the other vital statistics contained in the report, which show that the number of deaths annually occurring from tuberculous diseases increased or remained at about the same figure for many years previous to the beginning of the official inspection. It must be remembered that this represents but the very beginning of the crusade against consumption, and the report gives evidence of what may be accomplished in the prophylaxis of this disease by citing Flick ("The Prevention of Tuberculosis"), who shows that through legislative enactment tuberculosis of the lungs has practically been banished from the Kingdom of Naples.

The report further contains interesting tables of the distribution of tuberculous diseases in the two

most crowded tenement districts of New York City, the Fourth and Sixth Wards. From these tables the inference is made that even where tuberculosis occurs most frequently it is not uniformly distributed, but appears to be confined within narrow boundaries in certain streets and in certain houses; that prolonged exposure to the atmosphere of the infected rooms is a source of danger, and that proper sanitary measures rigidly enforced will lessen this danger. These measures are of course, inspection, disinfection of rooms, clothing, and bedding, the destruction of the bacilli in the sputum, and the isolation of cases when the necessary hygienic directions cannot or will not be enforced.

The educational work accomplished by the Department cannot be doubted by any one who comes into frequent contact with the tuberculous poor of the city. Although many of the more ignorant of them believe consumption to be directly contagious, this kind of ignorance does no harm, for it makes the patient more careful than he might otherwise be. The more intelligent, on the other hand, seem to be fully alive to the dangers lurking in their sputa, and use every means suggested to prevent the contamination of their neighbors. It may be said that such instruction should issue from the attending physicians, hospitals, dispensaries, etc.; but, as a matter of fact, it is well established that this information was never given to phthisical patients by hospital and dispensary physicians until the initiative was taken by the Board of Health, which has educated the physician in this respect as well as the patient.

The relations which the Department desires to hold toward the profession is tersely but emphatically stated on page seven of the report. The Board has no desire to interfere with the treatment of cases already attended by a physician, whether in a private or tenement-house; it will send no inspector if the attending physician so desires; it will send no circulars of information if the physician in charge will agree to deliver them, or, we are willing to assume, if he will orally deliver the hygienic information and prophylactic data contained in the circulars. Upon the following the Board of Health insists: That all cases of tuberculosis of the lungs shall be reported to its Sanitary Bureau. It is scarcely asking too much of the physicians in this

city to direct a postal-card to the Health Department announcing the discovery of a case of phthisis and stating that all essential hygienic directions and measures are being carried out. Reliance upon the integrity of the Department not to interfere with the treatment or direction of the case need hardly be doubted; for its honest intentions have been demonstrated too frequently in the conduct of contagious diseases to require further comment. Moreover, such reports as those mentioned can be of assistance to the Board in increasing its information in regard to the extent and distribution of the disease in question. A certain amount of arbitrary power must, finally, be conceded to a body possessing such inherent responsibilities as the Board of Health.

So far as the appropriation of \$60,000 for the care of indigent consumptives is concerned, there can be no moral or political objection to it. The greatest authorities, some of whom are cited in this report, are agreed that the most efficient treatment of pulmonary tuberculosis is to be obtained in sanatoria. The well-to-do can afford the luxury of such resorts; but the pauper who is afflicted with consumption has no such place to which he can go. The general public and private hospitals will not receive him, and he must, perforce, remain in his miserable dwelling, a constant source of danger to his companions and even to himself. The Board of Health, we assume, has no intention of assigning its own physicians to the treatment of these cases; indeed, by the action of the Board of Estimate, it is stipulated that the money granted be expended in hospitals already existing which have, of course, their attending staffs. The very poor who will avail themselves of this appropriation would never come under the professional care of a physician in private practice, and therefore, no one, as far as we can perceive, can be injured by this measure. The patient only will be the gainer. Since the city has established special hospitals for the treatment of scarlatina and diphtheria, it is to be hoped that in time it will awaken to the fact that tuberculosis is more fatal than these, more widespread, more ravaging, and demands a hospital devoted solely to its treatment.

Space forbids our going into further details. We would like to speak of the benefits accruing from the official examination of cows and of milk as having

lowered, or having a tendency to lower, tuberculous infection. We would like to go into detail concerning the regulation of expectoration in public places and in public conveyances, a regulation altogether too laxly enforced by the employees of the railroad companies, and a neglect which should be promptly corrected. But these and kindred subjects are a little foreign to our purpose, which has been to show that the position of the Board of Health in its action concerning pulmonary tuberculosis is an honest one toward the community and the medical profession, and that it deserves the cordial support of both.

ECHOES AND NEWS.

Bubonic Plague in India.—Telegraphic news from Bombay reports the bubonic plague still raging at Poona.

Maidstone Typhoid Epidemic.—Up to the first of December the cases of typhoid fever reported at Maidstone, England, numbered 1871.

A Medical Diplomat.—Dr. G. H. Bridgman of Elizabeth, N. J., has been appointed Ambassador and Minister Plenipotentiary to Bolivia.

Tennessee Medical College.—The building of the Tennessee Medical College, at Knoxville, Tenn., was destroyed by fire on the third inst.

Dartmouth Medical College.—The one hundredth annual graduation exercises of Dartmouth Medical College, Hanover, N. H., occurred on November 24th.

University of Chicago and Rush Medical College.—Negotiations are said to be under way looking toward the affiliation of the University of Chicago and the Rush Medical College.

Tuberculosis Hospital for Hamburg.—An unknown benefactor of Hamburg, Germany, has donated 250,000 marks for the purpose of erecting a hospital to accommodate one hundred patients suffering with tuberculosis.

A Doctor as Mayor-Elect of Buffalo.—Dr. Conrad Diehl, recently elected Mayor of Buffalo by a large majority, takes office on January 1, 1898. Dr. Diehl has practised medicine in Buffalo for thirty years, and is well known to the profession and general public.

Dr. Roswell Park.—According to the *Buffalo Medical Journal*, Dr. Roswell Park, who went abroad in search of health, is reported by a friend, who met him recently in Italy, to be in a very much improved condition and expecting to return to his professional duties in the near future.

Sanitarians and the Palace of Versailles.—According to the *Scientific American*, a sanitarian who visits the palace

of Versailles should never inquire about the arrangements pertaining to hygiene and sanitation. In its palmy days it possessed only a single bathroom, which was never used, and its present facilities are no better.

The Late Dr. Harrison Allen.—At a meeting of the Philadelphia Neurological Society, held November 22, 1897, resolutions were passed offering sympathy to the family of the late Dr. Harrison Allen, and expressing a sense of the great loss to science and the medical profession sustained by his death.

Medical Signers of the Declaration of Independence.—According to the *Charlotte Medical Journal* five practitioners of medicine signed the Declaration of Independence: Benjamin Rush of Philadelphia, Lyman Hall of Georgia, Oliver Wolcott of Connecticut, Josiah Bartlett and Matthew Thornton of New Hampshire.

Four Babies at a Birth.—A young woman, twenty-eight years of age, recently gave birth in New York City to three healthy boys, whose combined weight was nineteen pounds. Thirty-six hours later a fourth child was born. The last died shortly after birth, but the three boys are thriving. The mother is doing well.

City Aid to New York Charities.—In accordance with an opinion rendered by the Corporation Counsel the Comptroller is sending out letters to all charitable organizations which have received public aid through mandatory legislation, to the effect that their claims for support will hereafter be considered on their merits only.

A Correction.—In the article on the "Thyroid-gland Treatment of Cretinism," by Samuel H. Friend, M.D., of Milwaukee (issue of December 4th), the weight of the brain should have been given as 50 ounces (1548 grams, not grains), and the weight of the thymus gland should have been $2\frac{1}{8}$ ounces (64 grams, not grains).

Measles in Springfield, Ohio.—An epidemic of measles is prevailing at Springfield, Ohio. Owing to the negligence of parents and of physicians in not reporting cases, the spread of the disease is now beyond control, and about twenty-five new cases are reported each day. Over 1182 cases have been recorded to date. But one death has occurred.

Illinois Board of Health and the Bone-setter.—The State Board of Health has notified Atkinson, the "bone-setter," that he will not be permitted to treat patients publicly or privately in that State. In this respect Illinois has shown more energy than was manifested by the authorities when this same man was giving public demonstrations in New York City.

Medical Victims of Yellow Fever.—During the recent epidemic of yellow fever in New Orleans, twelve physicians were stricken with the disease, and two of them died. The same number of trained nurses were also attacked, but all recovered. The two physicians who succumbed to the disease were young men who had not lived long in New Orleans and were unacclimated.

Belladonna and Strychnia Pills Cause Death.—A woman recently died in Brooklyn, N. Y., after taking a number of pills containing belladonna and strychnia. The woman, who was suffering from indigestion, received the pills from a young woman employed in a wholesale drug-house in New York City, and was told by her to take one after each meal. Death was due to an overdose.

Vaccination War at Atlanta.—The large negro population of Atlanta, Ga., is fighting vaccination, and armed policemen are detailed to protect the physicians who are attempting to carry out the law in regard to compulsory inoculation. In several instances it has been necessary to resort to force, and in many cases the negroes disappear and remain away from home for weeks in order to evade the law.

Anthrax among Tanners.—An outbreak of anthrax has occurred among the tanners employed by the Elk Tanning Company at Williamsport, Pa. The disease has been contracted by handling hides, and the men have refused to continue work, in consequence of which the tannery has been compelled to shut down. Two deaths had occurred up to the 9th inst., and the condition of a third patient has been pronounced hopeless.

Pedlers and Eye-glasses.—The Mayor of Buffalo, N. Y., will not permit the sale of spectacles in the street by vendors, and every license granted to a pedler bears the clause: "No eye-glasses are to be sold under this license." The Mayor very properly holds that he has the power to forbid the sale of spectacles on the ground that the eyes not being scientifically tested before purchase, great injury might result to the purchaser.

Paterson's Epidemic of Typhoid.—Up to the 10th inst., ninety-nine cases of typhoid have been recorded in Paterson, N. J., and numerous cases have been reported in Jersey City, Newark, and the surrounding country. The wide dissemination of the disease, which originated in the family of the owner of a large dairy, shows that some amendments to the health laws of the State are required. The New Jersey State Board of Health is in favor of a law which will compel physicians to report all cases of infectious or contagious disease in city and country.

Report of Bubonic Plague in Cuba.—A recent despatch from Cuba to the secular press announces the presence there of the bubonic plague, saying that children and the aged are both attacked. Sanitary Inspector W. F. Bruner, United States Marine Hospital Service, announces that the disease reported as bubonic plague is beri-beri, which he states was until recently confined to the Chinese population, but is said to exist to some extent among the natives of the lower classes. He has not observed the disease except among Chinamen.

Typhoid-fever Epidemic at Lynn, England.—The present epidemic of typhoid fever at King's Lynn and the investigation of its water-supply recall the fact that in 1423 the lack of drinking-water caused such distress that Henry VI. gave powers to cut a canal to Gaywood River, the water

of which was considered to be very pure. Under Cromwell the water-canal was carefully cleaned out and a larger supply provided for. Strange to say, the keepers of ale-houses alone were made to pay for this improved water-supply, thus making the consumption of alcohol promote the cause of temperance.

Abdominal Hysterectomy.—In its report of a recent meeting of the Obstetrical Society of London, *The Lancet* says that Dr. Heywood Smith, in discussing the treatment of myoma of the uterus, referred to a paper which he had read in 1892 on subperitoneal treatment of the stump after hysterectomy, which he contended described the operation better than the term "intraperitoneal," and in which he mentions cases done by Goffe of New York and Milton of Cairo, as well as some by himself. He expressed his gratification that the most advanced operators were pursuing that method to the exclusion of the *serre-nœud*, oöphorectomy, and so-called panhysterectomy.

The Responsibility and Annoyances of Surgery.—Dr. Nicholas Senn of Chicago has been served with a writ compelling him to testify in a suit which is being brought in Galena, Ill., by a young woman against two physicians living in that vicinity. Some time ago the two physicians performed an operation for appendicitis on the young woman, and it is alleged she was told that the appendix was removed. Her condition became worse, however, and she went to Chicago, where Dr. Senn performed another operation, whereby the appendix was removed. When Dr. Senn was first summoned he telegraphed that he was unable to leave his practice, but said he would send a deposition. This did not satisfy the Court, and therefore the writ was issued.

An Abuse of Medical Charity.—Last winter a man presented himself at the New York Ophthalmic Hospital and asked that an operation for cataract be performed, stating that he was very poor. The hospital is partly supported by charity. In view of the man's statement, that he was unable to pay much, the physician in charge reduced the usual \$15 per week to \$5 per week for board and attendance. The man was admitted and stayed several weeks. It was then learned that he was senior member of a large wholesale grocery firm, and was worth about \$150,000. The hospital, therefore, presented a bill for \$200, the full rates; the man refused to pay; the hospital sued and received a verdict for the amount. Such vigorous treatment applied to a few of the many similar cases constantly occurring would have a beneficial influence upon the community.

Louisiana Board of Health Resigns.—The commercial community of New Orleans, La., blames the Board of Health of that State for permitting the entrance of yellow fever into the city, for failing to stamp it out sooner, and for all the consequent ills; hence, the Board of Trade issued a call to the various Exchanges to send committees to an indignation meeting which was held December 6th, for the purpose of making a united attack upon the Health Board. Governor Foster, however, forestalled the mer-

chants, and announced through the secretary of the Cotton Exchange that Dr. Olliphant, the President, and other members of the Board of Health who were appointed by the Governor, had placed their resignations in his hands. Those members of the Board who were appointed by the City Council will be asked by the Mayor to resign. It is expected that as soon as the Board can close up its business the members will give way to their successors without protest. Governor Foster will reorganize the Board on different lines. Hitherto, it has been made up principally of New Orleans physicians and citizens, and it is now proposed to appoint men from different parts of the State, as it is thought that a body so constituted will have more influence in regulating quarantine and health matters outside of the city.

Obituary.—Dr. Joseph F. Edwards, editor of the *Journal of Health and Hygiene*, died at Atlantic City, N. J., December 6th, in the forty-fifth year of his age.—The death is announced of Professor Tarnier, the eminent obstetrician, of Paris. Dr. Tarnier graduated in 1857 and succeeded Professor Depaul in the Chair of Midwifery and Diseases of Women and Children in the Paris Medical Faculty in 1884. A special Chair of Clinical Obstetrics was founded for him in 1889. His great work on obstetric medicine, written with the collaboration of MM. Chantreuil and Budin, appeared between the years 1878 and 1886. He was also the author of important works on the hygiene of infancy. He was very active in introducing antiseptic principles into midwifery, and was the recognized leader in his special department of medicine in France.—Dr. Campbell Morfit, the "American chemist," died in London, England, on the 8th inst., in his seventy-eighth year. Dr. Morfit was born in Herculaneum, Mo., and was educated at the Columbian University, Washington, D. C. He organized the Chemical Department of the Maryland Institute, and in 1854 became Professor of Applied Chemistry in the University of Maryland. In 1861 he went to London, where he has since resided.

The Hospital for Scarlet Fever and Diphtheria Patients in New York.—This hospital will be opened on or about December 29th, 1897. It is intended for pay patients, and is situated at the foot of East Sixteenth street, facing the East River. The hospital is a private corporation, controlled by its own Board of Governors, and is not connected with any other institution. The President of the Board of Health and one of the Health Commissioners are *ex-officio* members of the Board. The charges for rooms will be from thirty to fifty dollars a week, nursing and services of resident physician being included. Patients may be attended by their own physicians, if it is so desired. Patients intended for the hospital must not be removed from their apartments until the hospital authorities have been notified (telephone call, 2880 Eighteenth street), and the requirements of the Board of Health complied with. The hospital has its own ambulance and coupé service. The visiting physicians are: Drs. L. E. Holt, W. H. Katzenbach, George M. Swift, F. M. Crandall, W. K. Draper, and R. J. Carlisle. The con-

sulting physicians are: Drs. E. G. Janeway, A. Jacobi, W. H. Draper, R. H. Derby, F. P. Kinnicutt, A. A. Smith, and J. W. Brannan. Consulting laryngologist: Dr. H. H. Curtis. Resident physician: Dr. E. L. Dow.

CORRESPONDENCE.

THE EXISTENCE OF RABIES.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: I was very much interested in reading in your valuable journal, issue of November 20th, the report of a discussion on rabies, which occurred at a meeting of the Harvard Medical Society of New York, held October 23d.

I was much surprised to find that still there are members of the medical profession who do not believe that such a disease as rabies exists. As I happen to have seen two cases of this disease, one of which was in a patient who was under my care in the Massachusetts General Hospital, you may find space for a memorandum in regard to them in your journal.

In my early professional days, years before the discoveries of Pasteur, there was a general disbelief here as well as elsewhere among the most enlightened members of our profession in the existence of hydrophobia. I suppose this was owing to the fact that not one of them had ever seen a case. The admission to the Massachusetts General Hospital, at a time when I held a subordinate position there, of a beautiful little girl who had been bitten by a mad dog, accomplished much in overthrowing skepticism in regard to the existence of the disease in question. The patient was about seven years of age, and lived in the suburbs of Boston. While playing in the street she was bitten by a large, strange dog, which then passed on, biting a man a few moments afterward. Certain nervous symptoms which the child developed led her parents to send her to the hospital, where I saw her, and well remember the impression the little thing produced on my mind as she sat on the lap of a nurse in the female surgical ward.

I need not give the symptoms in detail; suffice it to say that the poor child died. This case convinced Drs. John Ware and Jacob Bigelow, both professors in the Harvard Medical School and visiting physicians to the hospital, who had before been skeptical of the existence of such a disease as hydrophobia.

In later years, when I was a visiting physician to the same hospital, I had a case myself, in the person of a youth some sixteen years old, who developed all the usual symptoms and died of the disease, the diagnosis being fully confirmed by Dr. Fitz, at that time pathologist of the institution, who made the autopsy. I am prompted here to make a remark which I think has been made before: The word hydrophobia, as indicating a fear of water, is entirely a misnomer. The young fellow of whom I speak longed for water, as he had an intense thirst; but the least attempt to drink brought on a spasm of the throat which completely prevented swallowing. At my first visit, however, I succeeded in persuading him to make an attempt to swallow a little milk. By making a strong ef-

fort he swallowed a teaspoonful or two, and then the spasm prevented for a few moments any further attempt. After a short delay, however, he renewed the effort, and so by frequent energetic attempts succeeded in getting down the whole tumblerful. As the disease advanced the effort to swallow brought on such tetanic spasms that he was obliged to desist.

In addition to these cases I am well-informed in regard to another, which occurred in my neighborhood in the person of a boy, about twelve years old. The boy was perhaps a mile from home, when a large dog approached, and, without provocation, jumped up and bit him on the eyebrow. As soon as the family physician could be brought to the patient, he washed the wound and then applied his lips to it, sucking it an hour, and hoping to thus extract any venom that might be present. Of course he frequently expectorated, not caring to swallow any poison should such be present. The wound was then cauterized with a red-hot knitting-needle. I ought to add that the courageous physician who tried this experiment was a homeopathist, who later distinguished himself as a soldier during the late Civil War.

It has sometimes been said that the disease known as hydrophobia is an affection of the nervous system, perhaps a delusion of the imagination, and has no real existence. I do not think the cases I have reported can be fairly explained away on any such theory. The little girl was too young to be the victim of a morbid imagination. The second patient had no suspicion of the nature of his disease, the word hydrophobia not being mentioned in his presence. The only history of a bite in this case was that an enraged female flying-squirrel, which he had taken from her nest and little ones a year before, bit him furiously when he reached home and was removing the animal from his pocket.

The last case was also that of so young a patient that it does not seem reasonable to suppose that apprehension had anything to do with the development of the symptoms, especially as the sucking of the wound would have quieted his fears by making him feel, even though the wound were poisoned, that all of the venom had been removed. In the case of the second patient, I could not learn that he had ever been bitten by a dog, though his character indicated that had such been the case he probably would not have mentioned the accident at home, especially if the bite had been apparently trifling. He had been sent to the hospital by a physician who told the family that it was a case of "lockjaw," and they did not know its true nature until after death had occurred.

S. L. ABBOT, M.D.,

Member of the Board of Consultation of the Massachusetts General Hospital.

BOSTON, December 6, 1897.

ANESTHESIA BY THE SCHLEICH MIXTURE.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In reply to inquiries in regard to the nature of petroleum-ether, I desire to state that it is identical to benzinum benzin, only of higher rectification—*i. e.*, higher boiling-point. Benzin, as usually found at

pharmacies, has a boiling-point of 55° C., and is, therefore, not applicable for use in the Schleich mixture, which requires benzin of a boiling-point of 60° to 65° C. I have used the Schleich mixture now in ten cases, substituting rhigolene (which is benzin at 70° C. boiling-point). This mixture has worked as well as the original, and I consequently recommend it for present use. This highly rectified benzin, or rhigolene, is not obtainable at an ordinary pharmacy. I have asked Squibb & Son to provide a supply of benzin of the proper degree of rectification, and to place it on the market for use in the Schleich mixture.

Yours truly,

M. L. MADURO, M.D.

NEW YORK, December 11th, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

NEW PROVISIONS FOR THE CARE OF THE CHRONIC INSANE—COLLEGE OF PHYSICIANS OF PHILADELPHIA—PHILADELPHIA OBSTETRICAL SOCIETY—JEWISH HOSPITAL—EXAMINATION OF STUDENTS' EYES AT THE UNIVERSITY OF PENNSYLVANIA.

PHILADELPHIA, December 13, 1897.

IN order to relieve the overcrowded condition which exists in the large State insane asylums, it is proposed by the State Board of Public Charities to remove all chronic cases from these central institutions and to distribute them among the various smaller county hospitals and almshouses. For a number of years past the congested condition of our general State insane asylums has hampered their work in many ways, and this plan for the removal of the great mass of the indigent chronic insane will no doubt solve the difficulty which has existed so long, and will result in many improvements from both socialistic and economic points of view. Under the new system, for which, by the way, provision was made some six months ago by an act of legislature, the State institutions will contain only the acute, recent, and curable class of cases such as could not be treated to the best advantage in the county hospitals, and will also continue to care for the criminal insane, until further provision is made for such patients. It is stated that there is ample room in the several county hospitals for all the transferred patients, so that additional institutions will not be necessitated.

A stated meeting of the College of Physicians of Philadelphia was held on December 1st. Dr. John B. Deaver read a paper on "The X-Ray Pathology of Fractures about the Elbow," the leading feature of which was the demonstration of the value of fluoroscopic examinations in this class of cases, by which it was shown that not infrequently a chipping off of the radius, not revealed by the ordinary means of examination, could be seen by the Röntgen-ray. A number of skiagraphs illustrating the speaker's topic were shown on a screen by stereoscopic projection. Dr. F. Savary Pearce read a paper, entitled "A Study of the Blind," in which 180 blind pupils at the Pennsylvania Institution for the Blind were analyzed as to their mental and physical status for comparison with those individuals possessing normal sight. Dr. Pearce's investigations showed that the blind are not "but seeing people in the dark," as the French school teach, but that they

are a distinct class of human beings with individual mental characteristics due to loss of the important function of sight, and that their vital capacity and physique is below that of seeing people of the same social standing; it was also shown that, as a rule, the blind are prone to anemia, due in most instances to lack of exercise. The advantages of institutions for the blind were pointed out as being threefold, as follows: (1) Segregation, producing concentration of efforts in like thoughts. (2) Similarity of physical work, as in the gymnastics of a school, or in labor production in a home, and (3) the application of restraints and self-restraints by capable instructors.

At the last stated meeting of the Philadelphia Obstetrical Society, December 2d, Dr. Joseph Eastman of Indianapolis, read by invitation a paper dealing with the question of operative treatment of pelvic support, in which he advocated supporting the uterus from above, as by the procedure of drawing down and stitching the broad ligaments to the vaginal wounds in order to prevent rectocele after the operation of vaginal hysterectomy, and he also recommended ventral fixation of the uterus for the same class of cases; the speaker strongly deprecated the French clamp operations, and held that support was never obtained in this way.

Dr. Joseph Taber Johnson of Washington, D. C., read by invitation a paper on the abdominal and the vaginal operations for the treatment of pus collections in the pelvis, and advocated the latter method as the one to be generally preferred, particularly in collections of pus low down in this cavity, in which evacuation can be secured by a free vaginal incision, without the higher mortality which attends abdominal section. The speaker believed that by the vaginal operation he had reduced the mortality from twenty-five per cent. to *nil* in patients whose weakened condition before operation made them liable to succumb to the shock of celiotomy. At the close of the evening's meeting a reception was tendered the visitors of the Society by Dr. E. E. Montgomery at his residence.

The Jewish Hospital is preparing plans for the erection on their grounds of a convalescent hospital and home for incurables. The sum of \$50,000 is now available for building purposes, and a legacy exists which will give the hospital authorities a handsome endowment for this department. Work on the new structure will be commenced during the spring of next year.

The authorities of the College Department of the University of Pennsylvania have recently announced that all students in that department of the University must have their eyes examined by an ophthalmologist, the expenses of this examination to be borne by the college authorities. This new step, which is being made to care for the physical condition of the students at this institution, is to go into effect at the same time that the regular physical examinations begin.

Dr. Richard C. Norris, who has recently recovered from a serious illness, has obtained a two-months' leave of absence from his duties as physician-in-chief of the Preston Retreat, and intends to leave during the latter part of this month for an extended trip to the Mediterranean and the Continent.

The total number of deaths in this city for the week ending December 4th was 391, a decrease of 3 from the preceding week, and an increase of 50 over the corresponding period of last year. Of the total deaths there were 139 in children under five years old. There were 324 new cases of contagious diseases reported, or 85 more than last week. Deaths from diphtheria numbered 41, with 152 new cases; from scarlet fever, 1, with 55 new cases; and from enteric fever, 10, with 117 new cases.

The number deaths in this city during the week ending December 11th was 401, an increase of 10 over those of the preceding week, and an increase of 26 over those of the corresponding period last year. New cases of diphtheria numbered 128, with 32 deaths; of scarlet fever, 47, with 3 deaths; and of enteric fever, 125, with 12 deaths. The rather alarming outbreak of diphtheria which occurred in two of the uptown wards last week and the week before has been somewhat suppressed by the strenuous efforts of the health authorities, although the disease can be scarcely said to be under full control as yet, for 28 new cases were reported from this district during the past week.

OUR BERLIN LETTER.

[From our Special Correspondent.]

PROFESSOR EDINGER AND THE TENDENCY TO SPECIALIZATION IN MEDICAL CONGRESSES—A NEW SUGGESTION IN THE APPLICATION OF THE X-RAYS—MODIFICATIONS OF THE CHEMISM OF THE BLOOD IN LEUCOCYTOSIS AND THEIR SIGNIFICANCE—THE USE OF GLOVES DURING SURGICAL OPERATIONS—PROFESSOR LEYDEN ON THE DIAGNOSIS OF ADHERENT PERICARDIUM.

BERLIN, December 11, 1897.

AFTER two recent experiences with large medical congresses—the one at Moscow and the other the meeting of the German Naturalists and Physicians at Brunswick—some of the medical men here have asked the very pertinent question *cui bono?* What is it all worth? It seems that there was a time, within the memory of men now living, when even the meeting of a National medical society was an occasion for the general practitioner to gather together the scattered threads of advancement in theoretic medicine, and the specialist to realize their application to the problems of general practice, and each would return to his clientele with broader views, newer methods, and with a sense of satisfaction at the information gained, which amply repaid the expenditure of time, money, and labor.

But all this has been changed. Whatever the specialist may hope for from the discussions, the general practitioners has little to gain. Medical congresses are afflicted, like everything else in our profession, with the furor for specialism, until now they are hardly more than a series of special society meetings, the only bond of union being the fact that they are held at the same time and place as their sister societies. No gynecologist thinks of attending a section on internal medicine; he scarcely has time in which to attend all the sessions of his own specialty. The laryngologist, the neurologist, each has the same reason

for confining himself to the comparatively narrow circle of his brother specialists, and their communications are the only ones for which he has an ear.

It is true that all specialists insist with unabating emphasis that real success in specialism lies in not allowing oneself to be limited by the narrow confines of a specialty, and that the broadening influence of general practice, even as regards success in a particular department of medicine, is likely to be seriously undervalued. Such expressions seem to be merely the result of habit, *vox et præterea nihil*. The theoretic branches of scientific medicine, which truly are the foundation of all real advance, receive the least attention. None but teachers and investigators have any interest in them. The sections on anatomy, physiology, even the one on pathologic anatomy, at a large congress, may be accommodated in small rooms with no fear of overcrowding. As Professors Edinger and Waldeyer say, for it is their opinions I have been quoting, "the only remaining chance for the theorists and practitioners to meet on common ground seems to be rapidly slipping away. Yet each class has urgent need of the experiences of the other. The practitioner will be aided in the application of new therapeutic measures, and the theorist and experimenter will be assisted in determining the direction his efforts should take, according to the success or non-success of existing methods.

National and International medical gatherings are becoming more and more unsatisfactory to the attendants. Except as pleasant opportunities for friendly greeting they almost cease to have an excuse for existence. The remedy is not easy to find, though Professors Waldeyer and Edinger each have a suggestion to make. Professor Waldeyer would have a National meeting in Germany but once in two years instead of once a year. Even then the number of papers would have to be limited, and precautions taken to see that only the most important ones and their discussions occupy the time of the meeting.

Professor Edinger thinks that the specialists should hold congresses by themselves, and that instead of the usual announcement of the committee of arrangements, "We take pleasure in announcing that at this year's congress our military-veterinary brethren will hold sessions of their own," there should be a limitation of the number of special sessions to be held to five or six, and that there should be a clearing-house committee to whom all papers should be sent, and who should select the ones of sufficient general interest to be read before the sections. The others being printed in a volume of preliminary transactions to be distributed before the meeting opens. As this is about the time of year that committees of arrangements are preparing for next summer's meetings, he commends this scheme or a modification of it to their consideration.

The Röntgen-rays are every day finding new applications, but not the least surprising is the very recent matter-of-fact suggestion of a stolid, prosaic, German doctor, as to their availability in the selection of a bride. The end of marriage being the reproduction of the species, any hindrances to this end which exist, and which may be discovered without subjecting the persons concerned to any

indignity, he argues, should be found out before marriage. Any insuperable pelvic contraction may thus be easily detected, and he suggests that *fiancés* should exchange not only ordinary, but X-ray photographs, when the preliminary steps to matrimony are being taken. This method, he considers, will be of invaluable services to members of royal and aristocratic families to whom the birth of an heir is all important, and the skiagraph of his beloved will be one of the things that a princeling will be supposed to possess before seriously commencing negotiations for her hand.

Some very suggestive work on modifications of the chemic constitution of the blood and certain of its metabolic processes after destruction of white blood-corpuscles, as seems to occur during both hypo- and hyperleucocytosis, has just been reported from Professor Senator's clinic at the Charité. Drs. Lœwy and Richter pointed out some time ago in the *Berliner Klinische Wochenschrift* that artificial changes in the number of leucocytes present in the blood produced by the injection of such substances as nuclein, spermin, or pilocarpin, were followed by changes in the alkalescence of the blood. The well known connection of variations in luxuriance and rapidity of micro-organismal growth with the varying degree of alkalinity of the culture medium led them to suggest that these variations of alkalescence are of great biologic importance in the practical questions of infection and immunity. The fact was at first disputed, but has now been confirmed by a number of experimentors, though the conclusions suggested by the original observers have not all been accepted. They now announce that the presence of albumoses in the blood may also be demonstrated in these hypo- and hyperleucocytic states. These albumoses are not the result of chemic processes caused by the substances injected to produce leucocytosis, but are the result of vital changes in the blood, especially in the white corpuscles. Their observations, if confirmed, will add another link to the chain of information as to the chemism of the blood in infectious diseases, which Klemperer and Von Jaksch so strikingly illustrated by their discovery of the increase of uric acid present during the leucocytosis of pneumonia. Such discoveries now constitute one of the most hopeful sources of information with regard to the real significance of symptoms in the infectious fevers.

Besides, Drs. Lœwy and Richter have shown, by adding sugar to freshly drawn blood which has been kept some hours in a brood-oven, that the glycolytic faculty of the blood, its power to dissolve and carry sugar, is considerably lessened if the blood be drawn from an animal after the production of artificial leucocytosis. This fact would seem to account for the observation made by Von Noorden and others that during pneumonia in which a typical leucocytosis is always present, the faculty of the individual for sugar metabolism, *i.e.*, for the storage and use of sugar products is greatly lessened.

Since Professor Mikulicz introduced the use of cotton gloves in operations at his clinic the custom has been gradually spreading here in Germany until now many of the younger surgeons are using them. In the larger

clinics, as a rule, not the operator himself, but the chief assistant nurses wear them. That they are a distinct advance in asepsis is admitted on all sides. This advance too, comes just with reference to that part of surgical asepsis which the bacteriologists have been some time insisting is likely to be most incomplete—the disinfection of the hands. The older surgeons still object to them, because of the unusual sensations their use involves, but it is evidently only a question of time when some such mechanical addition to the asepsis of the hands of nurses and operators will be generally adopted.

Professor Leyden recently reviewed the question of diagnosis of adherent pericardium during life in connection with the specimens from a case in which it had been found *post-mortem* without having been diagnosed previous to death. It constitutes the *pièce de résistance* of the young, ambitious diagnostician, and the veteran's opinion may be of interest. The general symptoms it causes he considers as those which may occur in almost any condition, endomyo- or pericardial, which hampers heart action. As to the one symptom which sometimes is pathognomonic, the systolic retraction at the apex, or even over a considerable area of the precordia, it is not always present and when it is, is not always significant. It depends for the latter upon the arrangement of the fascia. Fascia is notably liable to anomalies, and this special fascia has been shown by recent investigation to be subject to a great many variations. The diagnosis concretio pericardii is never more than a probable one, and this important pathologic change remains as one of the interesting diagnostic problems for the future to solve.

TRANSACTIONS OF FOREIGN SOCIETIES.

Berlin.

MYCOSIS OF THE HUMAN SKIN AND DISEASES IN GENERAL PRODUCED BY PATHOGENIC YEAST FUNGI—BOTTINI'S OPERATION FOR HYPERTROPHY OF THE PROSTATE.

AT a session of the Medical Society, October 20th, BUSCHKE read a paper on *Mycosis of the Human Skin and Diseases in General Produced by Pathogenic Yeast Fungi*. This is an old subject, and during more than twenty years the question has been disputed whether or not yeast fungi are pathogenic for men and animals. Raum, in 1891, obtained some positive results from experiments upon animals. Busse and Buschke, some time since, reported the death of a woman, aged thirty-one years, from ulcers of the face and a tumor of the left tibia. During life they demonstrated, both microscopically and by the culture method, the presence of yeast fungi in the lesions. Some months later, at autopsy, similar lesions were found in the lungs, kidneys, spleen, and in some of the ribs. Microscopic examination of the ulcer in the skin showed increased growth of the epithelium, inflammatory infiltration, loss of the line of demarcation between the cutis and the subcutaneous tissue, and the presence of numerous giant-cells. The epithelium was finally destroyed, the fungi pressing into the epithelial tissue, and by their growth contributing to the destruction of the lat-

ter. In general, the process greatly resembles the infectious tumors of actinomyosis, glanders, tuberculosis, and syphilis. Isolated instances of the occurrence of this disease in human beings have been reported of late years. Several observers have attempted to show that yeast fungi are responsible for the lesions of carcinoma, sarcoma, and variola, but such opinions are not as yet well-founded. Undoubtedly there have been many cases of disease produced by fungi which have been overlooked, and now that attention is turned in this direction, it is to be hoped that this obscure subject will soon be elucidated.

At the session of October 20th, HERZFELD described *two cases of mycosis*, the lesions of which greatly resembled those of thrush, although the microscope showed them to be produced by yeast fungi. One patient was an old man convalescing from influenza-pneumonia. The other was a girl twenty years old, who sought medical relief for difficulty in swallowing. The whole pharynx, mouth, and tongue were covered with thick, loosely interwoven masses of a grayer color than is usually seen in thrush. Cleansing of the mouth with a solution of borax speedily produced a cure in both instances.

FREUDENBERG spoke of his experience with *Bottini's operation for hypertrophy of the prostate*. This procedure is not entirely without danger. He lost one patient on the day following operation from pulmonary embolism. Another, a man aged seventy-seven, died the day after from a long-standing pyelitis; but it should be remembered that any operation in these cases is attended with a certain amount of risk, even the use of the catheter having its dangers. Hemorrhage occurred in three cases, but was not alarming. It may be avoided by making the incision slowly and keeping the cautery point at the right temperature. The success of operation depends upon the number of incisions, their length and their direction; and also to no small degree upon the after-treatment. In a few cases of Freudenberg's the operation was followed by incontinence of urine, but this was only temporary. Bottini has had the same experience. This complication is probably due to the extension of the incision into the membranous portion of the urethra.

London.

RECENT EXPERIENCE WITH LARGE DOSES OF CREOSOTE IN CONSUMPTION—TREATMENT OF LATERAL CURVATURE OF THE SPINE—EMPHYEMA OF THE ANTRUM IN A CHILD EIGHT WEEKS OLD—PARTIAL CRETINISM—SUCCESS OF COLEY'S FLUID—MESENTERIC CYSTS—ABDOMINAL HYSTERECTOMY FOR MYOMATA OF THE UTERUS—MEDICAL HEMORRHAGE.

At a meeting of the Harveian Society, October 21st, BEALE read a paper, entitled *Recent Experience with Large Doses of Creosote in Consumption*. The patients were treated with beechwood creosote dissolved in cod-liver oil, the dose being slowly increased from 5 minims daily to 160 or even 180 minims. The results achieved were highly satisfactory and in some cases most striking. The fall in temperature, gain in weight, and the subsidence of symptoms seemed to be more definite and lasting than the degree of improvement commonly observed as a

result of hygienic treatment alone. The creosote was well tolerated. In many instances the patients passed blackened or greenish urine; but it could not be ascertained that either the quantity or chemic composition was seriously altered. The speaker doubted if the more specialized products, such as guaiacol and its carbonate can give equally good results. However, the drug should be regarded not as a specific remedy but rather as a valuable adjunct to the many existing methods of hygienic treatment of phthisis.

THOMSON stated that at Dettweiler's sanatorium for consumptive patients at Falkenstein in the Taunus Mountains, creosote was given a long trial and finally abandoned, along with tuberculin and all other specific remedies. Treatment is now entirely symptomatic, and general dietetic and hygienic influences are the only therapeutic measures relied upon. FELCE said that commercial creosote is a somewhat variable product, and for this reason he prefers the carbonate of guaiacol.

At the session of November 4th, SMITH read a paper on the *Treatment of Lateral Curvature of the Spine*, pointing out the advantages which may be derived from mechanical, in addition to other methods of treatment. He said that it is claimed by advocates of the treatment by exercise alone that deformities in the bones cannot be remedied, and further stated that rotation is a test of such deformities. Smith has found that it is quite possible, by means of the hands alone, to hold the patient in a straight position, even though slight rotation has commenced; and it is also possible, by means of apparatus, to maintain the position until the bones readjust themselves.

CLARKE said there is much misunderstanding as to the various methods of treating lateral curvature. In rickety infants instrumental treatment is absolutely necessary. Some surgeons are mistaken in supposing that they use exercise alone in their treatment. Thus Roth's plan consists in placing the patient, during three-quarters of an hour, upon a hard table, as well as the use of a series of exercises. The weight of the patient pressing against the table makes the latter an instrument. Other similar instances were mentioned. Thus, there is less difference between the methods employed by various surgeons than at first sight appears to be the case.

At a meeting of the Pathological Society, November 2d, POWER showed a specimen of *empyema of the antrum in a child eight weeks old*. The face of the child was bruised in a forceps delivery, but the abscess was not noticed until one month later. At the time of operation the facial bones were extensively necrosed, and the child died thirteen days after the abscess cavity had been freely opened and curetted.

CALVERT and PIGG showed a specimen of *calcification of the pericardium*, the result of a chronic suppurative process which apparently had continued five years. The heart was almost entirely encased in calcareous material, and there were several ounces of inspissated pus in the pericardial cavity.

At a meeting of the Medical Society, November 8th, COLMAN showed a *child nine and one-half years old*

who was a partial cretin. A stunted growth, absence of any demonstrable thyroid gland, fat masses in the anterior triangles of the neck, thick lips, puffy eyelids, lordosis, and prominence of the abdomen were the signs of cretinism which she presented. There was, however, an entire absence of the usual nervous symptoms. The child was given daily 3 grains of the dry thyroid extract, and, within four months, grew two and one-half inches. Colman explained the absence of nervous symptoms by the assumption of an accessory thyroid whose secretion was sufficient to maintain the nutrition of the brain.

MOULLIN showed two cases in which *inoperable tumors had almost disappeared after the repeated injection of Coley's fluid*. One patient was a man, aged twenty-eight years, with a deep tumor in the groin. Gradually increasing amounts of the fluid were injected every three or four days. The tumor increased rapidly until three months after the beginning of the treatment, when it gave evidence of acute inflammation. From this time it rapidly grew smaller until only a trace of it remained, in which condition it still continues. The second patient was also a man, aged forty-eight years, with an irregular, hard swelling in the left flank, which was not connected with the skin or abdominal muscles. In this case the injections were given for some time without much apparent effect. Then the tumor became acutely inflamed as in the other case, and afterward rapidly subsided. Both tumors were considered to be sarcomatous, although there was no definite proof of this fact.

At a meeting of the Royal Medical and Chirurgical Society, November 9th, EVE read a paper on *Mesenteric Cysts*. The first case described was that of a male infant, aged eleven weeks, with a freely movable fluctuating tumor in the right side of the abdomen which was diagnosed as a mesenteric cyst. There was almost constant diarrhea and vomiting. Celiotomy was performed and a cyst of the mesentery of the small intestine was found attached to the abdominal wall. A few days later it was opened and drained. The child appeared to have recovered, but six weeks after had convulsions and died. The cause of death was not demonstrated at the autopsy. The second case was that of a male child, aged three and one-half years, in whom a cyst of the mesentery of the small intestine containing thirty-two ounces of serous fluid caused an acute intestinal obstruction. This cyst was excised, but death occurred nine hours after operation. These two cases illustrate the typical symptoms of mesenteric cyst in the earlier and later stages. The first had symptoms resembling gastro-enteritis with accompanying emaciation, the second, typical intestinal obstruction without definite premonitory symptoms. In the first case the cyst was easily recognizable by physical examination; in the second, it was obscured by coils of intestine.

At a meeting of the Obstetrical Society, November 3d, SUTTON read a paper on *Abdominal Hysterectomy for Myoma of the Uterus*, in which he took a position that provoked rather sharp criticism. He said that on account of the favorable results from the newer methods of hysterectomy, it is the duty of physicians to point out to patients the desirability of having myomata removed before

they grow too large to permit of a vaginal operation. As is the case with ovarian tumors, an early operation is less dangerous than one performed at a later stage. Whenever possible, if operating upon women who have not reached the menopause, he leaves the tubes and ovaries, on the principle that the best surgery does not needlessly sacrifice any organ, least of all such important ones. His results were admirable. Of twenty-eight patients he lost but two, and the period of convalescence was far shorter than if there had been a pedicle requiring extraperitoneal treatment.

DORAN insisted that the comparison between an ovarian tumor and a fibromyoma was an unfair one, for the reason that the former, if let alone, will almost always cause the death of the patient; whereas the latter will, in many instances, not even become troublesome. He objected to leaving the Fallopian tubes behind, because they often contain pathologic fluid. PLAYFAIR said that he could not subscribe to the doctrine that the mere existence of a myoma, whether it gives symptoms or not, is sufficient ground for a hysterectomy. This theory is dangerous and untenable. In many cases an oophorectomy should be preferred to a hysterectomy, on account of the lower mortality which attends the latter operation. He felt sure, however, that the extraperitoneal method is doomed. MEREDITH is not so dissatisfied with the extraperitoneal method as some of the other speakers. With this method of operating he obtained eighty-three recoveries out of ninety abdominal hysterectomies.

At a meeting of the Hunterian Society, November 10th, SMITH read a paper on *Medical Hemorrhage*. He divides the long list of medical hemorrhages into (1) those accompanied by some severe or fatal general dyscrasia or diathesis, and (2) those without such concomitant. As far as the immediate treatment of hemorrhage is concerned, he thought it wrong to administer ergot for arterial bleeding, as it increases the blood pressure, has no tendency to induce coagulation, and its power to stimulate contraction of involuntary muscle cannot stop arterial bleeding, except in case of hemorrhage from the uterus. In venous and capillary hemorrhage the contraction of the arterioles is beneficial by reducing the flow of blood through these vessels, and hence, ergot may be rationally administered in such cases. The most reliable treatment includes rest obtained by a horizontal position, and the administration of cannabis indica, or, better, opium. For pulmonary hemorrhage he recommends the administration of iodid of potash, and also inhalations of the vapor of turpentine. If the hemorrhage is gastric or intestinal, astringents are indicated. Colman spoke of the value of a large dose of sulphate of magnesium given at the beginning of a case of hemoptysis. Several of the members disagreed with Smith's opinion in regard to the injury which may follow the use of ergot in arterial hemorrhage.

Preparation of Aristol Ointment.—The formation of lumps which is apt to occur when aristol is directly incorporated with vaselin will be avoided if the aristol first be triturated with the neutral oil of vaselin.

SOCIETY PROCEEDINGS.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting, Held October 20, 1897.

THE President, DR. CHARLES L. DANA, in the Chair.

DR. L. D. BULKLEY read the paper of the evening, entitled

THE NON-SURGICAL TREATMENT OF BOILS, CARBUNCLES, AND FELONS.

The paper gave in detail the treatment which the author has employed during more than ten years in curing these conditions without the use of poultices or the knife. Referring to the causes of the formation of pus, he said that the essential features of suppuration, the staphylococci aureus and albus, are spoken of by one writer as being normally present on the skin, and that opinions are becoming divided as to the true pathogenesis of many conditions which were supposed to have been fully understood years ago. The author recognizes the pyogenous qualities of micro-organisms, but asserts that their powers are temporary and limited by their own nature and the condition of the tissues in which they are found, as shown by the different results attending superficial wounds in different individuals and also in the same individual at different times. Pus bacilli are everywhere present, and ready at all times to lodge and do their work if the soil be suitable, yet suppuration is set up in comparatively few instances. The occurrence of suppurative processes should always be regarded as a result of faulty metabolism, and a careful search should be made to find out and remedy that which is wrong.

Persons with boils, carbuncles, or felons are not in perfect health, and patient investigation will generally reveal the line upon which successful treatment should be instituted. Iron is most commonly needed, and the preparation used by the author is known as Startin's mixture, *viz.*: Ferri sulphatis, 3 i; magnesiæ sulphatis, 3 vi; acidi sulphurici diluti, 3 iv; syrupi zinziberis, 3 iv; aquæ, q. s. ad., $\frac{3}{4}$ iii. M. Sig. One teaspoonful, in water, through a tube, after meals. Unless contraindicated, treatment should be begun with a mercurial purge: Mass. hydrargyri, ext. colocynth. co., aa gr. x; pulv. ipecac., gr. ij. Divide into four pills. M. Sig. Two at night and the remaining two on the second night after. Repeat at the end of a week, or oftener if considered necessary. Sulphid of calcium should be administered because it has a decided effect on the process of suppuration, and it should be given in free doses— $\frac{1}{4}$ grain every two hours until eight or ten doses have been taken. Careful attention should be paid to the diet and mode of life.

The local treatment of furunculosis is as follows: To soothe and protect the inflamed area, to exclude the air, and to exert a slight antiseptic action, the surface is covered with a moderately thick layer of absorbent cotton, in the center of which is placed a mass of the following ointment: Acidi carbolici, gr. v-x; ext. ergotæ fld., 3 iii; pulv. amyli, 3 ij; zinci oxidî, 3 ij; ung. aq. rosæ, $\frac{3}{4}$ j. M. Sig. This is placed over the boil and held in place by

adhesive straps, which, however, should not pass over the boil. The dressing should be changed every twelve hours. Combined with internal medication this application will often absorb the boil.

The local treatment for carbuncle is the same as that for boils, the author adding that he has not found it necessary to incise a carbuncle since November, 1882. He admits that from neglect or other cause a very large suppurating carbunculous area may exist, which may demand active surgical treatment. This will not occur if the above treatment is carried out.

For inflammatory conditions about the ends of the fingers, commonly known as paronychia, whitlow, and felon, the same treatment is advocated, with the exception that diachylon or litharge ointment is employed. This is prepared according to Hebra's method, as follows. Olei olivarum optimi, 3 xv; plumbi oxidî, 3 iij-vj; olei lavandulæ, 3 ij. M. Add the oil to two pints of water, with constant stirring; the litharge is to be slowly sifted in while it is well stirred, fresh water being added as required. It should be stirred until cold and the lavender added. The finger is to be plunged into the jar and the first joint entirely enveloped in the ointment to the thickness of a quarter of an inch; over this absorbent cotton is placed and loosely bound. The author said that in cases seen reasonably early this treatment will relieve the pain and cause resolution, but that he places the greatest value on the internal and general treatment.

DISCUSSION.

DR. J. H. FRUITNIGHT said that all were agreed that in many of these cases constitutional treatment is as essential as local treatment. In general furunculosis he has always been in the habit of administering the sulphid of calcium, and with beneficial results. In this disease constitutional disturbance seems to be present, while carbuncle is more local, and not so much dependent upon constitutional causes. When a carbuncle is seen early, he makes a crucial incision and cauterizes it thoroughly. Ichthyol ointment sometimes aborts the process of suppuration.

DR. COLE said he could not agree with the author, although in many respects he coincided with him in regard to the constitutional treatment. There can be no doubt that in diabetes there is a tendency to these conditions, but they also occur when there is no constitutional disturbance. In these days of modern aseptic surgery, the patient can be more quickly and thoroughly relieved by incision than by any other method of treatment. The relief is instantaneous and recovery takes place in a remarkably short time. When there is constitutional disturbance he employs the sulphid of calcium in large doses— $\frac{1}{4}$ grain every hour, until the system is thoroughly saturated with it. Incision he considers the only treatment for carbuncle, and, if it be large, all diseased tissue should be removed. He cited the case of a man, seventy years of age, from whose back he removed a carbuncle as large as a dinner-plate. The indurated mass removed was two and one-half inches thick. The man recovered. Regarding the treatment of deep-seated

felons, he thought the tension should be relieved by an incision reaching to the bone. He referred to a case of felon of the thumb occurring in a young woman, who absolutely refused to submit to incision, and in which the thumb was lost. He expressed the opinion that it is simply tampering with a very serious trouble to treat these cases with ointments and constitutional remedies. By the use of the knife, relief is immediate and the patient is saved weeks of suffering. Ointments are useless when suppuration has set in. Building up of the system is well enough, but the knife is indicated in hundreds of cases. If pus is present, it will not escape unless an incision is made, and if it is not evacuated the bone will become affected and a joint or two will be lost.

DR. S. H. DESSAU said that, while he agreed with the previous speaker regarding the treatment of felons and carbuncles, his experience with furunculosis in children led him to think that there must be some constitutional factor which occupies an important place in the occurrence of this affection. It is common during the summer months to see an eruption of boils in children which is not often seen at any other season, and it would seem that the heated term acts as a depressor upon the nervous system, and thus favors the development of boils. In these cases excision of the furuncles when they reach the stage of suppuration does not seem to prevent the appearance of a second crop. Internal treatment is indicated, and is successful. For this purpose he prefers the syrup of the hypophosphite of lime, which seems to act almost like a specific in clearing up the skin. Carbuncles and felons are apt to occur in neurotic subjects, and felons are much more common in the female sex; and this would lead to the belief that they are the result of some nervous condition. He is in favor of incision down to the bone in the treatment of felons.

DR. ROBERT H. GREENE called attention to the value of carbolized oil as an application for boils and carbuncles. He has used it of a strength of half a dram to the ounce, or stronger, according to the susceptibility of the patient, during a number of years with excellent results.

DR. ROBERT MILBANK expressed the opinion that furuncles, boils, and carbuncles are due to one and the same microbe, differing only in the number of foci. He incises them early, freezing the part with ethyl chlorid, swabs them out with carbolic acid, washes them out every day, and keeps them covered with a light dressing. He cited a case in which a man, aged twenty-six, powerful and in splendid health, a rubber in a Turkish-bath establishment, had a series of carbuncles. Incision was advised, but the patient refused to submit to it, and the carbuncles followed one another until he allowed the speaker to open one, with the result that he has never had another. The patient probably contracted the disease by rubbing a man who was suffering from boils. Constitutional treatment should be employed to build up those who have become worn out and exhausted as a result of this painful disease, and not because the constitutional disturbance is the cause of the trouble.

DR. ROBERT A. MURRAY said that it is a distinct retrogression instead of an advance to treat these cases in

the way described by the author. The disease is due to infection, and applications to the skin will have no effect upon its progress. Constitutional disturbance may act as a causative factor in that it is accompanied by a depraved condition of the system. Furunculosis occurs in children because they are not cleanly, and during the warm weather because the skin is tender and easily infected. Boys who frequent the free swimming-baths are peculiarly liable to develop boils, obviously as a result of infection, even though a certain amount of anemia may exist. The administration of sulphid of calcium is all very well, but its effect is slow. Early incision under ethyl chlorid freezing or under nitrous oxid anesthesia is much better treatment.

The speaker stated as his belief that a felon is a periostitis; that the firm attachment of the periosteum to the bone at the tip of the finger prevents the escape of pus, and that necrosis will be the result if the case is not treated surgically. Mechanics and washerwomen often have felons because they are constantly stubbing and bruising the ends of their fingers, the mechanic with his tools and the washerwoman on her wash-board. The proper treatment is to incise and split the periosteum, evacuate the pus, and thus save the bone. If done early and properly there will be no deformity, whereas, if it be allowed to go on to rupture an ugly scar and often a distorted finger is the result. As the latter may prevent the patient earning his or her living, it is especially important that it be avoided.

He is in favor of incision and wide excision in cases of carbuncle, and cited a case in which he had successfully removed one as large as his hand from a woman ninety-five years of age. As a dressing he employs a 1 to 4 mixture of ichthylol and glycerin, and never iodoform in any shape, because poisoning is liable to occur as a result of rapid absorption. He referred to another case, that of a man who worked among horses, in which a series of carbuncles seemed to be due to infection by the anthrax bacillus.

DR. A. M. JACOBUS said that he had had no experience with the line of treatment laid down by the author. His custom is to promptly excise all carbuncles and felons, dividing the periosteum in the latter in order to let out the pus and save the bone. In regard to the constitutional treatment, there is no doubt that it should be thorough. Iron is generally indicated. He has used sulphid of calcium with practically no benefit.

DR. JOHN F. ERDMANN remarked that an experience such as that of the author, which covers twelve or fifteen years, deserves some consideration, but thought that Dr. Bulkley had not seen severe cases. Boils and carbuncles do not call for the same treatment as that indicated for felons. In the form of felon known as paronychia it is unwise to delay incision and run the risk of necrosis of the bone, destruction of the sheath of the tendon and of the tendon itself, and, possibly, palmar abscess. When pus is forming the knife should be used at once. Tension and pain are thus relieved, and the danger of infection traveling through the lymph-channels is averted. In carbuncle the question is not one of the formation of

pus, but one of the formation of slough. The pus is of low grade. The only thing is to make a free incision, several if necessary, in order to secure discharge of the slough itself. With regard to Dr. Murray's case, carbuncle is not caused by the anthrax bacillus unless there is true malignant pustule.

DR. JOSEPH COLLINS said he had not had much experience in the treatment of these three conditions, but that his knowledge of surgical pathology would seem to indicate that the views of the author of the paper are not in keeping with the rules of pathologic teaching. If it is taken for granted that felons, boils, furuncles, and carbuncles are caused by certain cocci, and that these cocci get into the system through abrasions of the skin or through the hair-follicles, it does not seem as though external applications would be beneficial. In his opinion, these conditions are due to the presence of cocci, and whatever constitutional symptoms there may be, are secondary or their presence is a coincidence. Depraved vitality predisposes to the disease. In such a condition iron and sulphid of calcium may be given with benefit.

DR. WILLIAM STEVENS also advocated early incision in the treatment of felons and carbuncles. In boils incision may sometimes be avoided by injecting carbolic acid deep into the substance of the boil.

DR. ROBERT NEWTON agreed fully with the author, and said he had seen many of these cases in a large dispensary practice, and that formerly he had used the knife, but now he employs the methods laid down in the paper, with very good results. Diachylon ointment, when freshly made, gives excellent results. Sulphid of calcium internally is one of the most valuable of remedies, and will sometimes prevent suppuration. In felons, when there is necrosis, the knife should be used. He was surprised that no one had mentioned the hypodermic injection of carbolic acid in the treatment of carbuncle. Dissolved in glycerin and injected well into the base of a carbuncle it often prevents suppuration. Furuncles and boils are a constitutional disease, and in many cases simple bicarbonate of soda will cure the dyspepsia which causes them. The worst type of felons he has ever seen occurred in a young woman with anemia associated with malaria. Proper treatment of these conditions cured her of the felons.

THE PRESIDENT said he felt that the members had attacked the author's position rather unsympathetically. It is certainly true that there are felons which get well without surgical treatment. There were points in the paper which ought to be considered more fully.

DR. BULKLEY, in closing, said that he was prepared for the criticism which his paper had called forth, but he had hoped that some of the members would agree with him. That many do agree with him is proved by the fact that after he published a series of papers on the subject he received letters from physicians all over the country in reference to the treatment. It should be remembered that this treatment is not a new thing. During the twelve years in which he has practised it he has seen many cases recover. The prevalence of carbuncles in diabetes is an argument in favor of the constitutional

origin of these disorders. The final parasitic cause is not denied, but he insists that constitutional disease makes the system ready to receive and nourish the parasitic element.

REVIEWS.

CLINICAL METHODS, a Guide to the Practical Study of Medicine. By ROBERT HUTCHISON, M.D., M.R.C.P., Demonstrator of Physiology, London Hospital Medical College, and HARRY RAINY, M.A., F.R.C.P. (Edin.), F.R.S.E., University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh. Philadelphia and New York: Lea Brothers & Co., 1897.

THIS work fulfils its purpose admirably. It is intended as a guide to the student and to the physician as to the manner of proceeding in the investigation of a case. It includes, therefore, case-taking, the examination of the various anatomic systems and organs, the examination of pathologic fluids, and also clinical bacteriology. As its title well indicates, it is a treatise on clinical methods without purporting to be a complete work on medical diagnosis.

The work begins with a description of methods of securing anamnestic data from the patient, and this is amplified by a "scheme" for taking a thorough physical examination. Chapter II. deals with the general condition and appearance of the patient; it brings forth points of vital importance in the examination and is very complete. The ten succeeding chapters take up in detail the examination of the systems of the body, in the following order: The alimentary system and abdomen, the circulatory system, clinical examination of the blood, the respiratory system, the urine, the skin, the nervous system, the eye, ear, throat, and nose, and the locomotor system. Our only criticism of these chapters would be that they are too diffuse; the authors have tried to cover too much ground. The spectra of hemoglobin and its derivatives and the table of origin of the spinal nerves belong rather to works on physiology and anatomy than to a book on *clinical* methods. On the other hand, the visual representation of auscultatory phenomena and of the direction of sound of the various cardiac murmurs are in the right direction and will prove distinctly helpful to the reader, be he student or practitioner. The nomenclature and terminology are decidedly modern, and this is especially true of the nervous system, although we prefer the word "convulsion" to "fits."

In Chapter XII. are given the usual methods of examining children, and many useful hints not ordinarily found in books of this class are to be noted. The succeeding chapter deals with the examination of pathologic fluids, including the fluid obtained from cysts and that secured by lumbar puncture. The concluding chapter of the book treats of the clinical bacteria with methods of preparing them for microscopic examination. Widal's test appears here and the Schottelins-Koch method of differentiating cholera bacilli is described, although not mentioned by name. The animal parasites are described in the chapters devoted to the organs which they inhabit.

We have cited enough to show how complete and up-to-date is this handbook of medical diagnosis and its methods. If the authors have included too much, it is a sin which is easily forgiven. We do not know of any book of its kind, in the English language, at least, which so thoroughly covers the ground. It contains much more than the average text-book of medicine, with as much as most books devoted solely to microscopic diagnostic methods. Moreover, the size of the book is convenient for carrying in the pocket. It contains 8 colored plates and 137 illustrations, all of them useful in elucidating the text. The illustrations exemplifying physical signs and conditions are particularly instructive.

TRAUMATIC INJURIES OF THE BRAIN AND ITS MEMBRANES, WITH A SPECIAL STUDY OF PISTOL-SHOT WOUNDS OF THE HEAD, IN THEIR MEDICO-LEGAL AND SURGICAL RELATIONS. By CHARLES PHELPS, M.D., Surgeon to Bellevue and St. Vincent's Hospitals. Forty-nine illustrations. Pp. 532. New York: D. Appleton and Company, 1897.

THE author very justly regards traumatism of the brain as "a division of brain surgery which has the greatest practical importance and has received the least careful attention." This is due to the fact, as he remarks, that "the intrinsic difficulty which has been encountered in the interpretation of symptoms resides in the usual complexity of lesions, and has been increased by their apparent identity in cases in which dissimilar pathetic conditions have been found to exist." Many useful papers have appeared, from time to time, on various branches of this subject, but until the present there has been no complete treatise which in any proper manner answered the demands of the surgeon. The want is now supplied by this work, a most interesting feature of which is that it is an original study. The basis of that study was five hundred consecutive cases of recent injury of the brain, occurring in hospital practice where the opportunities for accurate observation were favorable. The subject-matter is incomplete only in the illustration of secondary pyogenic infection, involving the brain substance, but this deficiency has been supplemented by a quotation from Macewen's "History of the Pyogenic Inflammations of the Brain and Spinal Cord."

The work is divided into two parts, *viz.*, Part I., General Traumatic Lesions, and Part II., Pistol-shot Wounds of the Head; to which is added the condensed histories of three hundred intracranial traumatisms. A preliminary section is devoted to the consideration of cranial fractures in which the lesions are classified and the general features of each class given, with the principles of treatment. In the subsequent chapters of this part the author discusses at length each variety of cranial lesion with that accuracy of detail and that precision of opinion which his great clinical experience abundantly warrants. This is especially noticeable in the chapters on symptomatology and diagnosis. In the treatment of cranial injuries the author makes a well-deserved distinction, too frequently overlooked, between epidural and subdural collections of blood. The line of treatment which he draws throughout

this chapter is decidedly conservative, and the rules of procedure which are given for the various forms of injury cannot be too carefully heeded by the young surgeon.

Part II. comprises the results of the most careful and painstaking study of pistol-shot wounds of the head on record. As these injuries necessarily receive slight consideration from military surgeons, they must be studied in civil practice, and some features must be determined by experiment on the cadaver. The author has had unusual opportunities for the clinical study of pistol-shot wounds of the head in the two great hospitals of this city with which he is connected, and he has evidently improved these advantages by a close and careful analysis of the facts in each case. His experiments on the cadaver were very extensive, and are illustrated by a large number of admirably executed plates. The medico-legal questions which these experiments elucidate are judicially considered and determined.

Our space does not permit of that critical examination of this work which would set forth in proper method its peculiar claims as an authority in this hitherto neglected and quite abandoned field of practical surgery. We can only state in closing this brief sketch that the author has produced a work which will be an imperishable monument to his long and patient labors and an honor to American surgery.

The publishers have done ample justice to the work, the paper, type, and illustrations being in the most approved form.

THERAPEUTIC HINTS.

For the Glossitis of Alcoholic.—

℞ Ac. chromici gr. x
Aq. dest. ℥ i.
M. Sig. Apply lightly to points of inflammation.

For Intertrigo.—Gently bathe the affected parts once daily with a watery solution of picric acid (1-120). When the irritation has subsided and the epidermis reformed, keep approximated surfaces separated with thin layers of absorbent cotton upon which the following powder is spread:

℞ Pulv. amyli } aa 5 parts
Pulv. lycopodii }
Cretæ præparatæ } aa 10 parts.
Bismuth subnit. }

For the Night-Sweats of Phthisis.—

℞ Plumbi acet. gr. x
Ext. gentianæ q. s.

M. Ft. chart. No. XII. Sig. Three to five powders daily.

For Influenza.—

℞ Quin. sulph. gr. xl
Pulv. digitalis } aa gr. xv
Pulv. scillæ }
Ext. opii gr. v
Ext. glycyrrhizæ q. s.

M. Ft. pil. No. XXX. Sig. Four pills daily.
—Pepper.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

AN ACCOUNT OF A RECENT EPIDEMIC OF MEASLES IN THE NEW YORK FOUNDLING HOSPITAL; ITS RELATION TO IMMUNIZATION WITH DIPHTHERIA ANTITOXIN.

By W. P. NORTHRUP, M.D.,
OF NEW YORK;

PROFESSOR OF PEDIATRICS IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE; VISITING PHYSICIAN TO THE NEW YORK FOUNDLING, WILLARD PARKER, AND PRESBYTERIAN HOSPITALS.

MEASLES in private practice, compared with measles epidemic in a public institution, seems to bear much the same relation in respect to gravity that varioloid bears to modified smallpox. Soldiers in barracks, prisoners in penitentiaries, and children in institutions seem to suffer from the grouping of cases of this infectious disease. This is especially true of epidemics occurring during the late winter months, after a long period of housing. There is certainly no epidemic disease which has ever visited the New York Foundling Hospital that has inspired such dread as has measles; its contagiousness is greatest, its complications most constant, its sequelæ gravest, and its mortality highest. Two years ago the Medical Board of the Foundling Hospital set itself the task of keeping measles out of the institution. Its methods were so far successful that no case occurred within doors or was brought in by children returning from the out-door department during a period of sixteen months. At the end of this time, by accident, an infant in the earliest stage of the disease, sojourning in the house one night, started the epidemic which forms the subject of this paper. In its results, this epidemic was by far the most favorable of all ever experienced in the institution; it was widely distributed, least serious in its complications, and least grave in its fatalities; it appeared in every nursery, penetrated every quarantine, attacked children already suffering from whooping-cough, bronchitis, diphtheria, and tuberculosis, infecting all susceptible infants. Though the figures may not impress the practitioner, whose experience is confined to measles occurring in well-nourished children living at home, the hospital physician will appreciate them, and also the steps taken to modify the course of the disease.

Season.—This epidemic occurred during October and November. The temperature during these two

months was unusually uniform and mild, allowing efficient ventilation. The children had had, during the previous summer, abundant recreation in the open air, and were in a good state of physical health.

Distribution.—Every precaution was taken to avoid grouping, so far as possible, of children in the active stage of the disease.

Precautions.—The children's eyes, noses, and mouths were cleansed with boric-acid solution. The rooms were not kept dark, but the beds were so arranged that the eyes were turned away from the bright light and reflecting surfaces.

It was a rule to keep all children in bed, under watchful care, during at least six days from the time the temperature became normal. Special stress was laid upon this regulation, at the same time that mouth cleanliness and ventilation were carefully supervised. Under this routine practice but two patients developed pneumonia. In both the temperature had previously been normal twenty-four hours. The complicating pneumonias developed during the first stage of the disease—the first week.

Statistics.—In all, there were 258 cases and 36 deaths (13.9 per cent.). Of the 258 cases 53 were complicated with bronchopneumonia (20.5 per cent.); of these 31 terminated fatally (5.8 per cent.). Autopsy showed the presence of complicating bronchopneumonia in 31 of the 36 fatal cases.

It should be remembered that the mortality is from complicated measles occurring in susceptible children, in age from nurslings to "runabouts" 4½ years old, regardless of previous illness or general condition of nutrition.

Complicating Diphtheria — Immunization.—In many measles epidemics diphtheria, pharyngeal and laryngeal, with subsequent bronchopneumonia, has been a most pronounced feature. In the one under consideration systematic immunization was practised upon all children not believed to be, by reason of age or location in the hospital, reasonably safe from complicating diphtheria. No nursing babies were immunized—one developed diphtheria. Of those believed to be in danger of contracting this disease (in age from 2½ to 4½ years, or from location in or near nurseries in which diphtheria had been observed in the memory of Dr. N. R. Norton, the present house physician) 129 were immunized. Some of this number had probably had measles

previously; for though fully exposed they did not contract the disease. However, 77 of the number immunized against diphtheria successfully passed through measles without developing this dread complication. In one nursery, considered safe, no cases of diphtheria developed, and yet none of the patients contained in it (13 susceptible) were immunized. This nursery was at the top of the largest building—the administration building—and widely separated from others. In a second nursery, where diphtheria had been occasionally observed, nine children with measles were not immunized, and the third day after the appearance of the rash, four out of the nine had a bloody nasal discharge. Cultures made from this showed the presence of the diphtheria bacillus. It was considered that this nursery would afford a fair control upon the observations in the remainder of the hospital. When the diagnosis of diphtheria was confirmed the four patients mentioned were immediately injected with 2000 units of antitoxin; the five remaining patients were immunized. No further cases appeared in this nursery, and the four children already having nasal diphtheria recovered.

The immunizing dose of antitoxin employed was 250 units (antitoxin of the New York Board of Health). No antitoxic rash appeared after the employment of this dose. On two occasions a dose of 400 units was employed for purposes of immunization, with the subsequent appearance of urticaria. No local disturbance or constitutional reaction was observed in the cases immunized with 250 antitoxic units. As regards the accepted period of immunity following the injection of the diphtheria serum, it was interesting to note that in two cases, after respectively 31 and 33 days, pharyngeal diphtheria developed. In these, curative doses of the serum were at once administered, and the patients promptly recovered.

A CONTRIBUTION TO THE SURGERY OF EMPYEMA, WITH THE HISTORY OF AN ILLUSTRATIVE CASE.¹

BY CHARLES E. LOCKWOOD, M.D.,
OF NEW YORK.

A CASE of empyema having recently come under my observation, and having found myself much involved in doubt as to proper methods of treatment to be pursued during the long course of the affection, I have thought it might be profitable to record my experience, and thus, perhaps, elicit that of others.

Pleurisy has been divided into three varieties dependent upon the character of the exudate, whether fibrinous, serofibrinous, or purulent, the last being

the one which at present especially claims our attention. The subject of empyema and its rational treatment has, during many years, been involved in much obscurity, owing to a lack of knowledge of the etilogic factors which determine the various manifestations of the disease. The consensus of modern opinion seems to be "that every empyema is due to microbic invasion of the pleural cavity."¹ The relative frequency of the different varieties of this disease has been stated to be as follows: "In adults, 50 per cent. of all cases are streptococcic, 25 per cent. pneumococcic, and the remaining 25 per cent. may be divided among several forms, of which the tuberculous is relatively most common. In children the pneumococcus causes at least 60 per cent., possibly 75 per cent. of all cases; most of the remainder are streptococcic or staphylococcic, both tuberculosis and putridity being rare."²

The rational treatment of purulent pleurisy demands the immediate evacuation of the pus by means of one of the methods now employed, *viz.*, aspiration, simple incision, thoracotomy with resection, and siphon drainage. It is now believed by many competent observers that each of these methods is useful when applied to properly selected cases.

The following is the history of the case observed by me:

C. B., a student, aged 16 years. His father died as the result of an accident. His mother is living and well. The paternal grandmother died of cancer of the stomach, and three brothers, one sister, and one uncle of the mother died of phthisis pulmonalis.

With the exception of chicken-pox, which he had two years before, the patient had always enjoyed good health up to the date of the illness under consideration. Just previous to this he had been training for a football match, and living upon a restricted diet. On December 10, 1896, while on the cars going from New York to Sing Sing, he had a chill, followed by high fever, the temperature under the tongue being 104.8° F.; pulse, 108; respiration, 28. A careful examination showed acute pneumonia of the lower lobe of the right lung, and also friction-sounds, indicating involvement of the pleura. The disease continued six days, with a morning temperature of about 102° F. and an afternoon rise to about 103° F., respirations averaging 36 to the minute, and pulse 112. At this period his daily diet consisted of about four pints of milk. On the seventh day the temperature dropped to 100.6° F. at midnight, and on the eighth day to 99.2° F. at 3 P.M., pulse and respiration remaining the same as before. On the tenth day the temperature dropped to normal at 3 A.M., and remained so until 9 A.M., rising to 100° F. at 3 P.M. Thereafter, from the eleventh to the 15th day, the temperature was normal or be-

¹ Read at a meeting of the Medical Society of the County of New York, October 25, 1897.

¹ Whitney, "Twentieth Century Practice of Medicine," vol. vii, Section on Diseases of the Pleura.

² *Ibid.*

low normal at 9 A.M., and then gradually rose to 100° F. by 9 P.M. Physical examination now showed pleurisy with effusion. On the sixteenth day the temperature was normal at noon and 102.4° F. at midnight. On the seventeenth day at 6 A.M. the temperature was 99° F., and at 9 P.M., 103° F., and the patient suffered considerably from dyspnea and pain in the right side, respiration rising to 32 and pulse to 120 at 6 P.M.

On the eighteenth day, December 28, 1896, I saw him with Dr. Madden of Sing Sing, who had been in daily attendance, and it was decided to aspirate the chest to relieve the patient and ascertain the nature of the effusion. From the character of the symptoms the latter was suspected to be purulent. Accordingly, I aspirated the chest under proper antiseptic precautions between the fourth and fifth ribs on the right side, and drew away twenty ounces of so-called laudable pus, much to the patient's relief.

On the nineteenth day the temperature was normal at 9 A.M., and rose to 101° F. at 6 P.M. An examination of the sputum by Dr. Harlow Brooks on December 29th showed the presence of the diplococcus of pneumonia, a few pus-cells, but no tubercle bacilli. From the twentieth to the twenty-second day the morning temperature was about 98.8° F.; evening temperature, 101° F.; pulse, 100; respiration 20. On the twenty-third day, with a morning temperature of 98.8° F., there was a rise at midnight to 100° F. On the twenty-fourth day the chest was again aspirated between the fifth and sixth ribs, and twenty ounces of pus removed.

January 4, 1897, the patient was brought from Sing Sing to New York, and bore the journey well. On January 5, 1897, it having been decided that an opening should be made to secure proper drainage and the skin surface of the chest having been properly cleansed and treated with applications of corrosive sublimate 1-1000, an incision was made by Dr. W. T. Bull on the right side in the axillary line through and parallel to the fibers of the latissimus dorsi muscle over the eighth and ninth ribs, and portions of these ribs, about one and one-half inches in length, were removed by first lifting up the periosteum and sliding it off, and then with a chisel and hammer cuts were made in the ninth rib, which was then cut through with the bone-forceps. The portion of the eighth rib was also cut through in the same manner. The pleural cavity was opened, and a large quantity of pus and fibrinous material removed. The cavity was irrigated with sterilized water and two rubber tubes (with perforations) three and one-half inches in length and about one-third inch in diameter were introduced, with a silk ligature tied through them from end to end as a precautionary measure in case of breakage. A large safety-pin was placed at the external end of the tubes, and a dressing of sterilized gauze and cotton applied and held in place by a folded towel over which were fastened strips of adhesive plaster by means of tape connected with the pieces of plaster.

On January 6th, the day after the operation, the temperature at 4 A.M. was 98.4° F., and at 4 P.M.

99.8° F.; respiration, 24; pulse, 108. Dr. J. B. Walker dressed the wound, removing the soiled gauze as often as it became saturated with discharge, and substituting fresh sterilized gauze, the change of dressing being made three times in each twenty-four hours. On account of sleeplessness the patient was given trional in 10-grain doses, and for the relief of pain $\frac{1}{4}$ grain of codein was administered. Action of the bowels was secured by means of two cascara tablets given each night. On January 7th, 8th, and 9th the wound was dressed as before, the average morning temperature being normal or subnormal, and at 4 P.M., 99.2° F., respiration 20, pulse 96. January 10th the tubes were removed, cleaned, and the usual dressing applied, the temperature being 98° F. at 4 P.M. and 100° F. at 12 P.M. January 11th the dressing was changed twice; there was considerable discharge, and the temperature at noon was 98.4° F. and at 8 P.M., 100.8° F.

From January 12th to the 15th the dressing was reapplied as usual, the morning temperature being 98.4° F., evening temperature about 100.8° F. On January 16th the tubes were removed and the wound irrigated, for the first time since the operation, with sterilized normal salt solution; tubes cleaned and reinserted; temperature at 8 A.M., 98.9° F., 8 P.M., 102.8° F.; pulse, 115; respiration, 20. From January 17th to the 24th irrigation of the cavity with sterilized normal salt solution was continued once daily, and the morning temperature averaged on each day about 102° F., and on one of these days I remarked that the evening temperature seemed to have gone persistently higher since the irrigations of the chest-cavity had been employed, although the patient had freely taken a most nourishing diet. From January 25th to February 1st the same treatment was continued, the temperature retaining the same characteristics, and the patient now complained of night-sweats; the spleen was found to be somewhat enlarged. There was an anemic murmur audible over the base of the heart. There was also slight edema of the lower portion of the legs, and I feared amyloid degeneration. I will here state that on January 17th Dr. Harlow Brooks of the Carnegie Laboratory wrote me as follows: "I did an autopsy to-day upon the guinea-pig which I inoculated with the pus from your case of empyema, and I find no evidence of tuberculosis. I find the cultures made from the pus to be a mixed growth, largely composed of pneumococci." It may also be stated that the Wolff bottles for promoting expansion of the lung had daily been used by the patient, and that a careful examination of the urine revealed nothing abnormal.

Realizing that some measure must be taken to prevent further absorption of septic matter, I asked Dr. Janeway to see the case with Dr. W. T. Bull and myself, and after a careful examination he expressed the opinion that he was unable to find any evidence of tuberculous consolidation or chronic pneumonia; that there was considerable thickening of the walls of the pleural sac, and an anemic murmur at the base of the heart, and also that the spleen was somewhat enlarged. His diagnosis was that the fever

was septic, and he recommended irrigation of the chest-cavity with a solution of carbolic acid in warm water (1 to 1000) and careful observation of the effects, being sure to measure the quantity introduced and compare the same with the amount returned, so as to leave no residue in the chest-cavity. He remarked that he had seen septic fever of this character abate under such treatment. The chest-cavity was irrigated with the above-mentioned solution of carbolic acid at 6 P.M. on February 2d, with no bad effect. On February 3d the chest-cavity was irrigated with a solution of carbolic acid, and in order to improve the general nutrition it was recommended that the patient take three milk punches daily, each containing $\frac{1}{2}$ ounce of whiskey, and also a teacupful of beef juice three times a day and as much nourishing food as possible. One or two teaspoonfuls of Gudes' solution of pepto-manganate of iron after meals was added to the medication. His temperature on the evening of February 3d was 103° F.; pulse, 112; respiration, 24.

On February 4th the temperature remained normal all day, the same treatment being continued, and we had an illustration of Sir Joseph Lister's principle "that the untoward consequences of operations are frequently due not to the operation itself, but to the poisoning of the wound by the products of decomposing discharges and poisoning of the system generally by absorption of these products. The decomposition is due to low organisms introduced from without, and may be eliminated by the use of such substances as will prevent their development or destroy them when present." The only question is whether it is safe to use such agents in a suppurating pleural sac immediately after an operation or during the following few weeks. In this case, during the first ten days following the operation, thorough drainage was secured by means of proper tubes and sterilized dressings frequently changed, with the effect that septic fever still continued. Irrigation with sterilized normal salt solution was then used, with the result that the fever was increased and did not abate until the carbolized water was used. I may add that owing to the fact that air was drawn into the cavity through the external opening, as was shown by the patient breathing and whistling through it, decomposition was produced by the introduction of low organisms with the air.

On February 5th the tubes were removed, cleaned, and the cavity irrigated with carbolized water, the temperature remaining normal, but the patient had a profuse perspiration during the night. On February 6th and 7th the same treatment was continued.

On February 8th the two tubes were removed and the cavity irrigated with carbolized water and a single perforated tube, one-half inch in diameter and three inches in length was introduced in the opening. There has been no rise of temperature above normal since February 2d. On February 9th the opening in the chest was observed to be growing smaller. There was some difficulty in inserting the large tube; patient daily takes three milk punches with one-half ounce of whiskey in each, three tum-

blers of beef juice, one ounce and a half of Gudes' pepto-mangan, and three pills containing 1 grain of powdered iron, $\frac{1}{100}$ -grain of strychnin, $\frac{1}{100}$ -grain of arsenious acid, and $\frac{1}{100}$ -grain of phosphorus, and also a most nourishing diet. February 11th to 13th, temperature normal; same treatment continued. On February 14th the large one-half inch tube was removed, and a smaller tube, one-quarter inch in diameter and three inches in length inserted; irrigation continued; temperature normal; drainage perfect; treatment continued. February 18th, the patient took an hours' ride in a carriage. On February 22d, he went home.

February 26th: Temperature normal during the twenty-four hours; no pain; patient walked around the block in the open air. He is using the Wolff bottles and an elastic exerciser to promote lung expansion, as he shows a tendency to stoop over and lean toward the right side, due to contraction of the pleural cavity.

I will add that during all this period particular attention was paid to the diet, the patient taking daily one pint of beef juice, a bottle of beer with his dinner, and three milk punches each containing one-half ounce of whiskey.

March 1st: Dr. Walker dressed the wound, irrigating the sinus with carbolized water and removing the one-quarter-inch tube. On coughing only about twenty drops of pus was expelled. A new perforated rubber tube one-eighth of an inch in diameter and two inches in length was now inserted, and the wound dressed with sterilized gauze.

March 8th: The same method of irrigation and dressing have been continued. The tube was found in the dressing when the latter was removed, and it was not reinserted. The sinus was now one and one-quarter inches in depth, and it was wiped out with cotton saturated with carbolized water, and a piece of gauze put in the opening. March 9th: A piece of gauze saturated with balsam Peru was inserted. March 13th: Sinus one and one-eighth inches in depth. A solution of nitrate of silver sixty grains to the ounce was applied to its walls and it was dressed with a piece of gauze dipped in thioform.

From March 14th to March 30th the sinus was daily dressed by cleansing with carbolized water, and a small piece of gauze saturated with balsam of Peru was inserted and then covered with a pad of gauze which was held in place by strips of adhesive plaster.

April 2d: The patient went to the country, and was instructed to apply daily the same dressing.

April 26th: The patient was seen by Dr. W. T. Bull and myself. Sinus has been daily dressed as previously described, and as there was no evidence of necrosis, it was decided to discontinue previous method of dressing and apply an ointment consisting of ten grains of boric acid in one ounce of white vaselin, under which application the sinus closed in about three days, healing soundly, and patient has remained well until the date of writing.

May 15th: I made careful measurements of pa-

tient's chest with the following results: On the right side a line drawn from the spinous processes of the dorsal vertebræ, on a line with the nipple, to a marked point on the middle of the sternum measured, on inspiration, $15\frac{3}{4}$ inches, on expiration, $14\frac{3}{4}$ inches. The same measurement on the left side, on inspiration was $16\frac{3}{8}$ inches, on expiration, 15 inches. Measurement of the whole chest over the same line: Inspiration, $31\frac{1}{2}$ inches; expiration, $29\frac{1}{2}$ inches. This shows a difference between the two sides on inspiration of $\frac{5}{8}$ of an inch, and on expiration of $\frac{1}{4}$ of an inch—a good showing, it seems to me, in consideration of the circumstances.

Summary.—The points of interest in connection with this subject and the history of the case observed by me are as follows:

1. The necessity of securing the highest point of nutrition in cases of pneumonia to sustain the vital activity and power of the body-cells to enable them to limit the ravages of the pneumococcus.

2. The importance of an early operation in empyema as affecting the prognosis, owing to the results of delay in allowing the increase of fibrinous effusion into the pleural cavity and thickening of the walls of the pleural sac, thus hindering healthy repair and lung expansion after evacuation of the pus.

3. The marked effect of irrigation of the suppurating pleural cavity with a solution of carbolic acid (1-1000), and thorough drainage in arresting the septicemia after its duration of four weeks following the operation, thus demonstrating the principle of the importance of preventing the entrance of low organisms into a suppurating cavity, or of destroying them after entrance in order to prevent or arrest septic poisoning.

4. The evidence given in this case by a characteristic temperature on the sixteenth and seventeenth days of the illness and on following days which pointed to purulent infection, although it has been shown that pus accumulation may occur in the chest with no sign of fever.

5. That in the case described there was evidently a perforation of the lung, thus allowing communication between the bronchi and the pleural sac which favored putrefaction, and that in such cases, characterized by putrid pus, carbolic irrigations are necessary.

To sum up my ideas after a limited experience and a careful review of the literature of the subject, aspiration is found to give twenty per cent. of cures, as shown by Holt's cases, and is sometimes efficient in children, tuberculosis, and in other cases which in the present state of our knowledge it is difficult to differentiate, and is, therefore, an uncertain method of treatment.

Simple incision with drainage and without resec-

tion, according to some statistics, gives equally good results as thoracotomy with resection, and reliable testimony seems to recommend it as particularly adapted for the disease in infants and in the debilitated, as the operation can be done without a general anesthetic, local anesthesia being sufficient, though further facts are needed, as Dr. Morrison says, before its position can be established. Thoracotomy with resection, when performed early, so as to secure thorough and efficient drainage, and combined with proper after treatment of the wound thus preventing the entrance of germs and the avoidance of irrigation, if possible, would seem by the now accumulated experience of many observers to offer the best prospect of a successful issue in the majority of cases. Still, that antiseptic irrigation may prove useful in certain instances, is, I think, proved by the course of events related by me. Siphon drainage would seem, according to the results obtained, to be a justifiable procedure under certain conditions.

RATIONAL GYNECOLOGY.

BY JOHN H. KELLOGG, M.D.,
OF BATTLE CREEK, MICH.

(Continued from page 791.)

Kneading with the Closed Fist.—(Fig. 11.) With the closed fists used in alternation work along the whole course of the colon, beginning at the upper end of the cecum and directing the movements upward to the lower border of the ribs to a point midway between the umbilicus and the sternum, at which the median line is crossed, then down on the opposite side, ending at a point close to the pubic bone, and just to the left of the median line.

The rate of movement should not be more than thirty per minute or two seconds for each hand. Care should be taken not to release the pressure upon the bowels with one hand until the other hand has been placed in position just in advance and close to it. Care must be also taken to follow the curves of the colon.

Kneading with the Thumbs.—(Fig. 12.) With the fingers behind and the thumbs in front, grasp the loin on each side between the thumb and the fingers. The right hand should thus grasp the lower end of the cecum, while the left hand grasps the upper part of the descending colon just beneath the ribs. Movements are then executed in an upward direction with the right hand, and in a downward direction with the left, the operator facing the patient's feet.

Mass Kneading.—(Fig. 13.) Still another procedure of value in abdominal massage is what may be termed "mass kneading," in which the operator endeavors to seize the abdominal contents with both

hands, manipulating them precisely as a baker does a mass of dough, the fingers of one hand being used in opposition to the heel of the other hand, and the abdominal contents kneaded and manipulated between the two hands.

upon the recti muscles, the operator facing the patient, the muscles are rapidly manipulated by the thumbs, working from below upward.

Replacement of the Abdominal Viscera.—(Fig 15.) This is necessary in many cases of abdominal mas-

FIG. 11.



Showing fist kneading of colon.

Rolling.—When the abdominal walls are considerably relaxed, they may be gathered between the hands placed parallel with the body, one on each side, and thus compressed, rolled, and shaken, together with the intestinal contents. Care must be taken to include the abdominal contents, and not

sage as a preliminary procedure. It is especially required in women, since in the majority of invalid women some of the viscera are almost certain to be misplaced. The stomach is displaced from two to five inches below its normal position in nineteen out of twenty of all adult civilized women who have

FIG. 12.



Showing thumb kneading of colon.

merely the skin and subcutaneous tissue or a mass of subcutaneous fat. A very effective mode of masseing the recti muscles is to cause the patient to raise the head (Fig. 14), then, with both hands placed upon the abdomen in such a manner that the thumbs rest

worn the conventional dress. A movable or floating right kidney is to be found in at least twenty-five per cent. of women who are likely to require abdominal massage. The liver is also not infrequently found displaced. The patient lies upon the couch

with the head, not the shoulders, elevated, and with the knees well drawn up so that the abdominal walls shall be as thoroughly relaxed as possible. First of all, the patient is made to take several deep breaths, care being taken to see that the abdomen is

Shaking and rolling movements are valuable as a preliminary measure, or used in alternation with the lifting movements, as a means of loosening up, so to speak, the abdominal contents, to prepare them for gliding easily into their normal positions. The lift-

FIG. 13.



Showing mass kneading.

expanded well with each inspiration.

The next procedure is to lift the entire intestinal mass. To do this the masseur stands with his right side to the patient, facing the patient's feet, and places one hand in either groin, the hand resting upon the ulnar borders (little fingers), and having

ing movements should be executed from three to six times in alternation with rolling or shaking movements.

Inspiratory Lifting.—I was led to adopt this means of lifting the abdominal contents by a series of studies for the purpose of noting the influence of

FIG. 14.



Showing method of kneading abdominal muscles.

the direction of Poupart's ligament. The hands are made to move slowly upward, the ulnar borders being at the same time crowded as deep as may be into the pelvis so as to grasp as much as possible of the abdominal contents, which are then drawn forcibly upward. (Fig. 16.)

respiration upon intrapelvic pressure. I observed that the ascent and descent of the uterus in respiration may be greatly increased by modifying the inspiratory and expiratory movements. For example, by directing the patient to take a deep breath and then asking her to force the breath downward, it

was noticed that the pelvic contents were forced downward to a notable extent; while by causing the patient to completely empty the lungs, and then, with the glottis closed, to make a forcible effort, the pelvic and abdominal contents were made to ascend

tory force is used in lifting the abdominal contents. In this movement the patient should be made to expand the chest, both the upper and the lower parts, as much as possible, as it is desired to suppress the action of the diaphragm so far as may be done vol-

FIG. 15



Showing method of replacement of stomach.

in a very remarkable manner. In one instance it was noted that the uterus which lay quite low in the pelvis was drawn up more than an inch with each respiratory effort executed in the manner described. The patient, lying upon the back, with the hands at the side, so as to relax the abdominal muscles as

untarily, while bringing into most active play those muscles of inspiration which act upon the ribs. This not only produces a powerful upward draft upon the abdominal contents but at the same time enlarges the waist, and makes room for the viscera, so that their ascent is facilitated. At the same time that

FIG. 16.



Showing method of lifting the viscera.

much as possible, is directed to first take a full breath, breathing as deeply as possible, and then to completely empty the lungs. Then instead of drawing in the breath as usual, the glottis is closed, and a strong inspiratory effort is made without the admission of air. By this method the whole inspira-

the patient executes inspiratory lifting the abdominal contents should be lifted from below with the hands as previously directed. The patient should not be allowed to refrain from breathing more than ten or fifteen seconds. During this time, however, from three to five vigorous inspiratory liftings may be

made. Then the patient may be allowed to take a few ordinary respirations, and finally a deep breath, followed by a complete expiration and a renewal of the inspiratory lifting. This procedure is of special value in connection with pelvic massage.

slightly elevated, arms by the side, and the head (not the shoulders) supported by a thin pillow. The following brief descriptions of each of the manipulations will be useful to those who may be desirous of making practical use of massage as a

FIG. 17.



Showing apparatus for kneading the abdomen.

Pelvic Massage.—Pelvic massage should never be undertaken by any person who is not a qualified and experienced physician. The success of this procedure depends, first, upon a correct diagnosis and secondly, upon special aptitude on the part of the masseur. It is scarcely possible for a person to be-

curative measure:

Preliminary Procedures.—The manipulations practised in pelvic massage are rendered very much more efficient by the application of a few preliminary movements for the purpose of placing the abdominal and pelvic contents in the most favorable condition

FIG. 18.



Showing apparatus for pelvis tilting.

come proficient in this special application of massage without personal instruction from some one who has by long experience become skilled in its employment and in the selection of cases to which it is adapted. The patient lies upon the back, with the heels well drawn up, the knees separated, the hips

possible. It should be remembered that in pelvic displacement there will also be found displacement of the abdominal contents. When the uterus falls backward the folds of intestines which have formerly been behind it, aiding and supporting it, change their position, overlying it above and in front.

Replacement of the uterus requires, first of all, replacement of the intestines; in other words, room must be made for it in its old position before it can be restored to its normal place.

The preliminary movements which I have found most effective are: (a) deep breathing; (b) lifting

placed in perfect position, then lifted upward and forward as far as possible without giving too much pain. The extended fingers of the right hand are at the same time pressed upon the abdominal wall just above the pubes, so as to impinge upon the fundus, covering as large an area of the uterus as possible.

FIG. 19.



Showing head and leg raising forward.

abdominal contents; (c) inspiratory lifting, all of which have already been described. Essentially the same movement as lifting the viscera may be executed with the patient in the knee-chest position. The masseur stands with his back to the patient's head, and reaching around the patient with one arm,

Firm, intermittent pressure is then made, continuing two or three seconds, with intervals of one or two seconds, this being repeated six to twelve times. In this procedure the pressure of the external hand will fall chiefly upon the top of the fundus.

Digital Kneading of the Uterus.—The fingers of

FIG. 20.



Showing head and leg raising backward.

drags the bowels upward during inspiration.

Intermittent Compression of the Uterus.—The preliminary movements being completed, one, or when possible, two fingers (index and middle fingers) of the left hand are introduced into the vagina and crowded upward behind the cervix, the uterus being first

the left hand being returned to the first position behind the cervix, thus supporting the organ, the fingers of the right hand execute a circular digital kneading movement, beginning at the top of the fundus, and enlarging the circle until the fingers are made to press down the sides of the uterus and all about it.

Lifting Movements.—The preceding manipulations will have completely freed the uterus from the overlying intestines so that the top of the fundus will be in immediate contact with the peritoneal surface of the anterior wall of the abdomen. By the combined action of the internal and external hands the uterus can now be freely lifted forward so that its form may be easily outlined by the fingers of the right hand. The action should be intermittent. After lifting it forward as far as possible without inconveniencing the patient the uterus is released, and allowed to drop down, then again lifted, the action being repeated six to twelve times, at intervals of two to three seconds the uterus being held forward for a like period.

Vibration of the Uterus.—While supporting the organ with the fingers of the left hand behind the cervix the thumb or one or more fingers of the right hand is applied to the top of the uterus, and fine vibratory movements are communicated to it. This is a powerful means of stimulating the uterine circulation.

Digital Kneading of the Appendages.—In pelvic massage the manipulations should not be confined to the uterus alone. The ovaries, tubes, and the broad and round ligaments may be massaged thus: After lifting the uterus well forward, freeing it from the overlying intestines, the fingers of the left hand are directed toward an ovary. Starting as low down as possible, firm pressure is made in an upward direction, while the fingers of the external hand are made to cooperate in an effort to grasp beneath the ovary and tube and lift them forward. At the same time, gentle digital kneading movements are executed, the pressure of the external (right) hand being directed toward the fingers placed internally.

Digital Kneading of the Round Ligaments.—The fingers in the vagina should be directed toward the inguinal canal while digital massage is executed by the fingers of the right hand, traveling in a curved line from the external ring along the side of Poupert's ligament and toward the fundus. The internal fingers will to some extent follow the movements of the right hand so as to compress the tissues between the fingers of the two hands.

Stretching of Adhesions and Kneading of Exudates.—When adhesions and exudates are present, firm pressure should be made directly upon the bands of adhesion or the masses of exudate with the tips of the fingers opening internally, counter-pressure being made externally, and, so far as possible, the morbid parts should be grasped between the fingers of the two hands and thus subjected to digital massage. Adhesions are also stretched by the lifting movements of the uterus previously described.

Nerve Compression.—The sacral plexus of the spinal nerves and several of the lowermost pairs of ganglia of the sympathetic are accessible to digital pressure through the vagina, and in appropriate cases these, as well as other nerve structures, may be stimulated by gentle compression in connection with other procedures. One of the largest nerve masses accessible to compression through the vagina is the hypogastric plexus, which is located on the anterior surface of the sacrum just below the promontory. A row of four or five sympathetic ganglia lie on either side of the median line just over the junction of the sacrum and the ilium, the anterior aspect of the sacro-iliac synchondrosis. A single ganglion (coccygeal) lies in front of the coccyx. Pressure made upon these points stimulates the ganglia and their branches, and by this means excites the circulation in the pelvic vessels. Nerve compression in this region as in other parts of the body must be applied with very great discretion. This procedure should never be employed in cases in which inflammation, active congestion, or excessive hyperesthesia exist. It is only appropriate in cases of passive congestion, atony, subinvolution, and general relaxation of the parts.

It is generally well to alternate some of the foregoing procedures, especially the lifting and kneading movements, instead of adhering closely to the order in which they have been given for the purpose of precise description. Upward deep kneading movements executed with the closed fist may be advantageously alternated with the other movements mentioned.

Massage of the Abdominal Muscles.—After the internal manipulations, the muscles of the lower abdomen and inner thighs should be gently massaged. The procedures most useful are the following, employed in the order named: Tapping, hacking, spitting, centripetal friction, and finally stroking.

Finishing Movements.—(a) Knee separating; breathing. The patient should inspire while separating the knees, and expire while closing them. The vigor of the exercise may be increased by making a slight resistance to the movements of both adduction and abduction. The movements should be made at the rate of ten to twelve per minute. (b) Hip raising, breathing in as the hips rise and breathing out as they sink. This movement should be repeated from four to eight times. The movements of the knee separating, hip raising, and breathing may be executed simultaneously.

The treatment should be concluded by having the patient turn upon the face, and then administer percussion, tapping, hacking, spitting, beating, and clapping over the sacrum and fleshy portions of the hips.

The following points should be carefully observed in the administration of pelvic massage:

1. Never administer pelvic massage to erotic patients, nor in cases of vaginismus, acute pyosalpinx, pelvic abscess, growing tumors of the uterus or ovaries, rectal ulcer, acute vaginitis, irritable urethra, or inflammation of Skene's glands, until these conditions have been removed. The best results are obtained in cases of subinvolution of the uterus, relaxed ligaments, recent exudates, and passive congestion with little sensitiveness. Kesch recommends that uterine massage be applied especially during menstruation, but does not give valid reasons for the recommendation. My opinion is very positive that massage should be discontinued during this period.

2. Before treatment have the patient thoroughly empty the bladder and bowels, employing an enema if necessary, or a colocylyster. A hot vaginal douche should also be administered.

3. No movements should be made with the hands used internally except with the ends of the fingers.

4. The force employed should generally be sufficient to produce slight pain.

5. In cases of flexion the flexion should, if possible, be straightened during the manipulation. In all cases of displacement the uterus must be restored to the proper position.

6. Care must be taken to have the patient breathe deeply and regularly during treatment.

I have devised an apparatus for kneading the abdomen (Fig. 17) and a tilting-table (Fig. 18) which elevates the pelvis as in the knee-chest position. I find the tilting-table especially valuable as a means of vasomotor gymnastics and draining the pelvis. This apparatus is of great service in all forms of pelvic congestion and in ovarian disease, uterine catarrh, displacement of the pelvic viscera, and in rectal disease of various forms. After spending a few minutes upon the tilting-table, rising and falling with its oscillations at the rate of about eight times a minute, patients suffering from the maladies named and similar ones almost invariably express themselves as experiencing a marked sense of relief. The effects of this mode of passive exercise of the blood-vessels are so agreeable that patients are inclined to continue the application as long as they are allowed to do so. This apparatus also aids in the restoration of the displaced viscera. This is accomplished by adding to the tilting-table a device by means of which the pelvis is lifted free from the table while the patient lies upon the face, thus causing the abdominal wall to sag downward. As the table is tilted, the patient is lifted into such a position as to cause gravity to make an upward (in relation to the normal position) pull upon the viscera of the trunk.

I find Swedish gymnastics of various forms especially serviceable in correcting those abnormal bodily shapes which favor the development of pelvic disease, and in shortening and strengthening weak abdominal muscles—two things which I consider most important in the curative treatment of pelvic displacements. Those movements are especially useful which act upon the muscles of the trunk. The accompanying cuts show a few of those which I have found most serviceable. (Figs. 19, 20.) Some fourteen years ago I visited Stockholm, Sweden, for the purpose of becoming acquainted with this system of gymnastics which is universally acknowledged to be the most thoroughly scientific of all. Since that time I have made constant use of it on an extensive scale, and I am fully persuaded that it is one of the most essential and important factors in the radical treatment of curable pelvic disorders.

Light calisthenics, especially such as bring into play the muscles of respiration, are of the highest value as a measure for building up the patient's general health.

Swimming I regard as especially helpful in this class of cases provided, of course, that the exercise can be practised under favorable conditions. The enforced and vigorous action of the adductor muscles of the leg and of the muscles of the back during swimming is highly conducive to the correction of one of the fundamental causes of visceral prolapse. I might dwell at considerable length upon the details of the methods of treatment referred to, but space forbids. I will only add that the results obtained during the last twenty years in the treatment of many thousands of women suffering from chronic pelvic disorders have been in the highest degree gratifying and encouraging. Scores of women previously sentenced to submit to surgical procedure of various sorts have by the measures outlined been enabled to escape from unnecessary and mutilating operations, and are now in the enjoyment of good health.

In conclusion, I wish to enter the earnest plea that the gynecologist in the practice of his specialty shall cease to fix his eye so exclusively upon the organs which occupy the pelvis, but that he shall extend the domain of his investigations and therapeutic endeavors to the organs of the adjacent cavity, the abdominal viscera, giving particular attention to the sympathetic nervous system. Indeed, must it not be conceded that the gynecologist is only prepared to deal intelligently with the morbid conditions which may manifest themselves in the pelvis, when he has thoroughly investigated every region and function of his patient, and that his supreme effort should then be, not simply to cure some pelvic disorder compre-

hended under some specific name, but to restore to health and physical soundness the whole system; in other words, that he shall undertake to cure his patient rather than her malady?

CLINICAL MEMORANDUM.

A FATAL CASE OF DIFFUSE RECURRENT LEPTOMENINGITIS CAUSED BY OTITIS MEDIA.

By GEORGE H. POWERS, M.D.,
OF SAN FRANCISCO.

THE patient, a man aged thirty-five years, and in splendid physical condition, called me early on the morning of July 30, 1897, having been suffering with excruciating pain in the right ear during several hours of the night. He had been swimming—a form of exercise in which he frequently indulged—on the 28th, and began to have moderate trouble with his ear on the 29th, attributing it to the effect of the water which he had taken into his mouth and nose, as he had had a previous experience of the same kind. On the former occasion he had otorrhea during three weeks, from which he recovered with no sequelæ except a slight deafness in the affected ear. During the eighteen months or more which intervened between the first and second attack he was said to have had no symptoms whatever, but since his death I have learned from his business associates that he had for some time shown unwonted irritability and occasionally a sort of obstinacy quite foreign to his previous habit.

At my first visit I found a copious discharge of bloody serum from the ear with hardly a trace of pus. He suffered from severe cephalalgia, but there was no special tenderness in or about the ear, and no swelling.

Thorough cleansing of the meatus with dry cotton relieved the pain in the head remarkably, and with a dose of antikamnia, 10 grains, he slept some hours. At noon I was again summoned, and found the pain quite as great as before. After cleansing the meatus I found a small sac distending the skin anteriorly and superiorly which I incised, and thus released a quantity of blood and serum, but no pus. Again he was greatly relieved. At 4 P.M. the pain had returned to some extent, but was not as severe as before, and again it was relieved by a simple dressing. At 6 P.M. I found him asleep, and did not rouse him. At 8.30 A.M., July 31st, I was hastily summoned, and found the patient struggling with members of the family who were trying to keep him in bed, unable to comprehend when spoken to, eyes staring, pupils dilated moderately, pulse about seventy and very full. I sent at once for Dr. J. R. Laine, the consulting surgeon of the railroad company by which the patient had been employed, who responded, and with me took charge of the case, confirming the diagnosis of meningitis.

The discharge from the ear was still a sanious fluid, and there was no swelling or apparent tenderness about the ear or the mastoid, but in order to get an examination, otherwise impossible on account of the constant motion of the patient, we gave him chloroform and freely incised

the membrana tympani, but without revealing any pus or giving any relief. Proper treatment for the condition of meningitis was at once instituted and another consultation arranged to be held at noon, then only ninety minutes away, but when we again reached his bedside we found that the patient had just expired without regaining consciousness.

So sudden a death demanded a *post-mortem* examination, which was made by Drs. Philip King Brown and Clarence Quinan, and clearly showed that no means we could have employed, operative or otherwise, could have saved life, there being extensive disease of the inner table of the skull resulting from a former attack of otitis media, lighted up and leading to a fatal result by bacteria introduced on the occasion previously mentioned, probably from the water in which the patient was bathing.

Autopsy.—External examination of the head revealed some discoloration of the skin, most pronounced behind the right ear. The blood-vessels of the scalp were injected, and bled slightly when incised. The outer table of the skull appeared to be normal. The vault of the cranium was now removed, the inner table of which also appeared to be normal. The cerebrum and cerebellum having been removed, inspection of inferior half of the skull revealed the following conditions: An old fracture line crossed the posterior third of the squamous portion of the temporal bone, its direction being nearly vertical from above downward and a little forward. The outer table of the skull over the fracture line exhibited several linear openings from 3 to 5 mm. in length. These were only seen after removal of the pericranium. The portion of the skull removed with the right temporal bone did not include the entire length of the fracture. The fracture corresponded very closely to a line drawn from the right parietal eminence to a point about one-quarter of an inch in front and a little above the right external auditory meatus, where it terminated, the fracture line crossing the temporoparietal suture about one and one-quarter inches in front of the posterior angle (inferior) of the right parietal bone. At the lower (temporal) end of the fracture the skull was very thin and exhibited two linear openings.

On the inner table a deep groove corresponded to the fracture line and bounded anteriorly a circumscribed area of necrosed bone covered with numerous exostoses. This area of necrosis covered the entire posterior third of the squamous portion of the temporal bone, and extended upward upon the adjacent parietal bone more than an inch above the suture line; below it extended over the external third of the anterior surface of the petrous portion of the temporal bone as far forward as a point corresponding to the superior semi-circular canal. Posteriorly, the superior border of the sigmoid groove of the lateral sinus sharply defined the area of bone necrosis. By measurement the bone was found to be affected a distance of about two inches from above downward and one inch from before backward.

On section of the temporal bone through the upper third of the tympanum that cavity was found to be filled with blood-clot, as was also the mastoid antrum. The malleus was still adherent to the remains of the membrana

tympani, which amounted to little more than a ragged fringe about the annulus tympanicus.

No recognizable quantity of pus was found either in the tympanic or mastoid cavities; the portion of the mastoid process exposed in this section was somewhat injected, but otherwise appeared to be normal. The cavity of the antrum was evidently continuous with the lower posterior part of the necrosed inner table (that is, the uppermost pneumatic cells underlay this portion).

The blood-vessels of the dura mater were engorged with fluid blood. Very little blood was found in the superior longitudinal sinus. Over an area corresponding to the necrosed bone the dura was thickened. Over the entire anterior two-thirds of the right hemisphere as well as over the middle lobe of the left hemisphere the pia was quite opaque, of a yellowish-white color, an abundant purulent exudate covering the convolutions.

Horizontal serial sections of the right and left hemispheres showed that the arteries of the cerebrum ovale, major and minor, were injected, punctate hemorrhage following incision. The white matter appeared to be normal. The lateral ventricles were normal, as was also the choroid plexus. Removal of the corpus callosum and fornix revealed no abnormalities. The venæ Galeni were somewhat engorged; third ventricle normal. The sections were continued on down to the divergence of the crura cerebri. The corpora striata and internal capsules were normal on both sides. The arteries of the base were perfectly normal. They did not contain much blood, and what little was found was fluid.

Cultures were taken as follows: (a) Of the cerebrospinal fluid; (b) of the fluid in the cavity of the tympanum; (c) of the exudate on the hemispheres.

Culture (a) was a pure culture of the streptococcus pyogenes aureus.

Culture (b) was an almost pure culture of the streptococcus pyogenes. Over ninety per cent of each colony was made up of this organism. A single colony of the staphylococcus pyogenes aureus was found, and also a single colony of bacilli, both of which were probably accidental inhabitants of the cavity.

Culture (c) was a pure culture of the streptococcus pyogenes aureus.

MEDICAL PROGRESS.

Treatment of Adenoids During the First Year of Life.—CUVILLIER (*Rev. de Therapeut.*, October 15, 1897) recommends that pharyngeal or postnasal adenoids, during the first year of life, be treated medically before instituting their surgical removal. He finds that salves and powders are less serviceable than the instillation into the nasal cavities of a few drops of mentholated (1 to 60) or resorcinated oil (1 to 25 or 1 to 50) while the head is held backward. Four or five drops should be introduced into the nostrils and this treatment repeated every three hours. Cotton saturated with a borated solution of glycerin may be used in each nostril as a tampon to loosen the mucus collections. These maneuvers should be made with prudence

in order to avoid the possibility of laryngeal spasm. When, notwithstanding this treatment, coryza frequently occurs, the adenoid growth should be removed, the necessary procedure being no more serious at this age than at any other. No anesthetic is required. The operation should be quickly performed, with an adenoid forceps bent almost at a right angle and very short, corresponding to the size of the nasopharyngeal cavity of an infant of this age. It is better to make only one or two bites with the forceps at a time, and, if necessary, the procedure may be repeated once or twice at a later date. Antisepsis of the nasal cavity may be secured by the instillation of mentholated or resorcinated oil, the latter being less painful than the former. The results after operation are excellent. Respiration is re-established through the nose, nutrition becomes regular, and the growth of the infant resumes its normal course.

Shall We Return to Antisepsis?—MIKULICZ (*Deut. med. Wochenschr.*, June 24, 1897), in a recent article, takes the position that as it is practically impossible to secure perfect asepsis of the hands, it would be better if surgeons would return to the use of antiseptics which have been so generally discarded in these latter days. In hospital work he advocates the use of thin white cotton gloves, known to the trade as "footmen's thin gloves," which should be sterilized, several pairs being used during the course of an extensive operation. The hands should, of course, be rendered as free from germs as possible. Moist towels should be worn over the nose and mouth, as it has been found that even in quiet speech, particles of saliva are ejected from the mouth. Thus two important sources of infection, the hands and the breath, are eliminated as far as possible. From the point of view of the bacteriologist many spectators are objectionable at operations.

The Segregation of Lepers.—IMPEY writes to *The Medical Week*, October 15, 1897, calling attention to the unnecessary expense and annoyance of the detention of anesthetic lepers, who cannot, in his opinion, communicate the disease to others, since the bacilli of this disease are not found in any tissues except the nerves. For practical purposes all lepers should be divided into two classes: (1) tuberculous and mixed leprosy, and (2) pure anesthetic leprosy.

In his own country, Cape Colony, Impey states that there are, so far as known, about 2000 cases of leprosy, not more than one-third of which are of a tuberculous or mixed type. Anesthetic leprosy is of only about four-years' duration, and to herd the cured and non-contagious patients with the dangerous ones, is a wrong to them and an unnecessary expense to the State, and it also renders it almost certain that some of the patients will, sooner or later, contract the disease in the tuberculous form.

Fined for Endangering the Public Health.—A woman in Belfast, Ireland, was recently fined for allowing her niece to go to school and attend an examination while suffering from typhoid fever.

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THE QUARANTINE BILL BEFORE CONGRESS.

In another column is presented in full the bill recently introduced in the United States Senate by Senator Caffery of Louisiana, embodying the recommendations upon this subject made by the President in his Message and by the Secretary of the Treasury. Senator Caffery comes from the State which suffered most severely during the recent epidemic of yellow fever not only in the number of cases and deaths which it occasioned, but also in the paralysis of its commerce and resulting financial distress. He knows from personal experience and familiarity with the views of his constituents the necessity of uniformity in the quarantine laws and of a strong arm of authority with which they may be administered. Although Louisiana can justly boast of one of the best quarantine organizations of all the Gulf States, she suffered from the want of an equally efficient quarantine service in the State which happened to be her nearest neighbor. Moreover, Louisiana is the State from which came the greatest opposition to the former National Board of Health. Indeed, it was through the war waged upon that body by the local quarantine authorities of Louisiana that its efficiency was impaired and its sinews were cut. The recent experience has evidently wrought a change

of heart. What she asks now is to be protected from her friends—her neighbors—by the strong hand of the Federal Government. This can only be accomplished by a uniform law applicable to all States, the administration of which rests in a centralized organization. The aforesaid bill makes the National Quarantine as administered by the Marine Hospital Service paramount to all local quarantine boards, so that no ship can enter any port without submitting to the regulations of the Treasury Department, as administered by the Marine Hospital Service, nor can any ship be detained for quarantine inspection after it has been passed by the Marine Hospital authorities. The bill also provides that whenever yellow fever, cholera, plague, or typhus fever has passed the quarantine of the United States, or in any manner any one of these diseases has gained entrance or has appeared within the limits of any State or Territory, the quarantine regulations of the United States, prepared under the direction of the Secretary of the Treasury, shall be supreme and have precedence of State or municipal laws, rules, or regulations. The President is authorized to enforce the same within the limits of any State or Territory, to control the government of vessels, railroad trains, vehicles, or persons within any State or Territory, to prevent these diseases from spreading from one State or Territory to another State or Territory, and to prevent unnecessary restrictions upon interstate commerce.

The people of the States recently afflicted by the scourge of yellow fever cannot shake off the horrors and hardships of that calamity, and look forward with dread and apprehension to the return of warm weather. The Marine Hospital Service is already organized on a sufficiently comprehensive basis to enable it, promptly upon the enactment of this bill, to extend its equipment and be ready at the first indication of any awakening of the dread disease to fulfil efficiently all the requirements of its new functions. By the passage of this bill without undue delay, the existing confidence in the uniform vigorous enforcement of quarantine and of sanitary regulations which has characterized the work of the Marine Hospital Service, will restore a feeling of security to the business interests of the South and of safety to the people.

Congress has before it for enactment this winter no measure of more pressing urgency than this Quarantine Bill introduced by Senator Caffery.

THE REGULATION OF THE PRACTICE OF MIDWIVES IN NEW YORK.

It is gratifying to know that at last there is an encouraging prospect of a general law being enacted at Albany this winter regulating the practice of midwives. From the year 1808, when a committee of the Medical Society of the County of New York waited upon Mrs. Louisa Kastner, then unwarrantedly advertising herself as a midwife authorized by the Society, and requested her to submit to examination, down to the present time, the practice of midwifery by uneducated persons and the horrible fatality attending it has been frequently discussed by that body; committees instructed to draft legislative bills in reference thereto have been repeatedly appointed, but their efforts have never resulted in the enactment of a general law.

It is difficult to understand why such an important branch of medicine should ever have been differentiated from other branches and its practice lawfully placed in the hands of an uneducated class. The explanation of this paradoxical condition of affairs probably lies in the false dictum, "Labor is a physiologic process." Quoting from an editorial by Dr. E. P. Davis of Philadelphia, which recently appeared in these columns, we reiterate the sentiments of this writer: "The dangerous half-truth, 'Labor is a physiologic process,' has shielded the indolence and greed of many obstetric teachers." The same trite and moss-grown principle has been equally efficacious in the protection of the ignorant midwife—at the sacrifice of thousands of lives.

The recent awakening of the profession to the possibility of securing relief by legislation from many professional and social abuses has stimulated the perennial effort to regulate this important department of obstetric practice. The Society of Medical Jurisprudence at its meeting in November appointed a committee to consider and report to the Society what legislation, if any, is desirable to regulate the practice of midwives in this State, and what steps this Society should take to that end. This committee has drafted a bill vesting in the Regents of the State University the power to license midwives, upon the recommendation of medical examiners having in turn power to prescribe time, place, and character of examination; and vesting in the State and local Health Boards power to prescribe the sani-

tary safeguards under which the practice of midwifery shall be carried on. The right to continue their avocation, of those midwives who have already practised long enough to acquire some experience and clientele, is recognized. To provide for this two classes of midwives are created in the proposed law: First class, embracing those who after a year's study shall show their competency by examinations; second class, consisting of those offering evidence of no better qualifications than their actual practice during two years prior to the law's enactment.

A covert but prevalent abuse attending the practice of midwives is the prevalence in their ranks of professed abortionists. The licensing and registration of midwives in accordance with the requirements of the proposed law will do much to raise the standard both morally and mentally of those entering this calling. But even then the desirability of absolutely prohibiting midwives from attending cases of abortion or miscarriage is worthy of careful consideration with a view of incorporating it in the bill mentioned. Those members of the committee engaged in collecting statistics to accompany the bill when introduced at Albany may find valuable data in the field of investigation suggested above to convince the legislature of the necessity for the prompt enactment of the measure.

THE PUBLIC PRESS AND THE ACADEMY OF MEDICINE.

SOMETHING over a year ago, a paper read before the Ophthalmological Section of the Academy subsequently appeared, with a photograph of the author, in several of the daily papers. The author, being questioned, denied all responsibility for the occurrence.

On the 18th of January, at a meeting of the same Section presided over by Dr. Pooley, attention was directed to the presence of reporters, and the disposition of the matter being left to the Chairman, he decided that they should be requested to retire. One of the gentlemen as he went out begged to be allowed to say on behalf of himself and his companions, that they were not there *sub rosa*, but in obedience to orders from their managing editors, who had received folders announcing the meeting.

The Section, after discussion, passed a resolution to the effect that "The Ophthalmological and Oto-

logical Section desires an expression of opinion from the Academy of Medicine as to the desirability of having reporters present at the meetings of the Academy and its Sections."

At the regular meeting of the Academy of February 4th, a motion was carried that "each Section should decide for itself the question as to the desirability of admitting reporters," and the astonishing fact to which we desire to call attention is that at this same meeting a motion was *lost* to the effect "that folders of the Academy should not be sent to the daily papers." This action admits of but one construction—that a majority of the members of the Academy of Medicine would not like to lose any opportunity of giving their opinions and papers for advertising purposes to the public press. Let us hope that it is only necessary to have the attention of the members of the Academy drawn to the subject to insure reconsideration and proper action.

ECHOES AND NEWS.

Doctor's Coachman Turns Practitioner.—At an inquest held in Manchester, England, as to the death of an infant aged three days, it appeared in the evidence that the mother had been delivered by a man who was "acting as assistant to a medical man." In answer to a question from the coroner, who recognized him, the man admitted that he was *coachman* to the medical man mentioned.

A Correction.—Through a misunderstanding between the printers and the editorial office, Dr. W. H. Thomson was credited in the last issue of THE NEWS as visiting physician to New York, Bellevue, and Roosevelt Hospitals. Dr. Thomson has no connection with the New York Hospital, and has recently resigned his position in Bellevue. He should, therefore, be credited with Roosevelt Hospital only.

English Criticism of "Degree-Shops."—A correspondent writes to the *Lancet* (London) to say that he knows of an instance where an American university conferred the degree of Doctor of Medicine on a layman who had merely presented a thesis. In reply, that journal remarks that "either the institution has been imposed upon or is a bogus university—a degree-shop—of which there were once many in the States."

A Nurse's Quarantine.—A nurse who had been caring for a child ill with scarlet fever in Liverpool, England, recently brought suit against the father of the child for one week's additional wages and expenses for the period during which she remained in quarantine after leaving the case. The rules of the nurse's home where she was employed would not permit her to accept another engagement until she had been in quarantine seven days. The

judge gave a decision allowing her the amount claimed on the ground that the rule above alluded to was a good one and clearly to the interests of the public.

New York State Board of Health and Antitoxin.—The board of Health of the State of New York is endeavoring to adopt means to improve the quality of antitoxin serums manufactured in this country, and to this end it proposes to have all serums offered for sale in this State submitted to a bacteriologic examination in the laboratory of the Health Department of New York City before being placed on sale. This is the plan pursued in Europe where every ounce of serum is inspected by duly authorized officials in the State laboratories. Dr. Herman M. Biggs, bacteriologist of the Health Department of New York City, states that as a result of investigations he found several of the samples of serum submitted to him unfit for use owing to the occurrence of decomposition. Some of it was also below the standard strength by as much as fifty units.

SPECIAL ARTICLE.

THE NEW QUARANTINE REGULATIONS.¹

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That "An Act granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service," approved February fifteenth, eighteen hundred and ninety-three, be amended by striking out the following words in section one: "And with such rules and regulations of State and municipal health authorities as may be made in pursuance of, or consistent with, this Act," and striking out section three and inserting the following in the place of said section:

"SEC. 3. That immediately after the passage of this Act the Secretary of the Treasury shall make such rules and regulations as are necessary to prevent the introduction into the United States of any infectious or contagious disease from any foreign port or place, or the spread of such diseases from one domestic port to another, and such necessary rules and regulations as shall be observed by vessels or vehicles departing from foreign ports, or places for ports, or places in the United States, to secure the best sanitary condition of such vessels or vehicles, their cargoes, passengers, and crews, which rules and regulations shall be published, and communicated to, and enforced by, consular, quarantine, and customs officers of the United States, and the State and local quarantine officers of the United States. All rules and regulations made by the Secretary of the Treasury shall operate uniformly, so far as climatic conditions will justify, in the interest of security against the introduction or spread of said infectious and contagious diseases, and shall not discriminate against any port or place. None of the penalties herein imposed shall attach to any vessel from a foreign port, or owner or officer thereof, until a copy of

¹ A bill introduced by Senator Caffery in the Senate of the United States, December 9, 1897, read twice and referred to the Committee on Public Health and National Quarantine, and known as Senate Bill No. 2680.

this Act, with the rules and regulations made in pursuance thereof, has been posted up in the office of the consul, or other consular officer of the United States, for ten days, in the port from which said vessel sailed, and the certificate of such consul or consular officer, over his official signature, shall be competent evidence of such posting in any court of the United States. Nor shall the penalties imposed by this Act attach to any common carrier or officer, agent, or employe of any common carrier, crossing the border of the United States, until a copy of this Act, with the rules and regulations made in pursuance thereof, has been published and made publicly known.

"At any port or place in the United States where the Secretary of the Treasury shall deem it necessary for the prevention of the introduction of contagious or infectious disease from a foreign port or place that incoming vessels, vehicles, or persons shall be inspected by a national quarantine officer, such officer shall be designated or appointed by the Secretary of the Treasury, on recommendation of the Surgeon-General of the Marine Hospital Service, and at any such port or place no vessel, vehicle, or person from a foreign port or place shall be admitted to entry or enter without the certificate of said officer that the United States quarantine regulations have been complied with.

"Any vessel sailing from any foreign port without a United States consular bill of health, and arriving within the limits of any collection district of the United States, and not entering or attempting to enter any port of the United States, shall be subject to such quarantine measures as shall be prescribed by regulations of the Secretary of the Treasury, and the cost of such measures shall be a lien on said vessel, to be recovered by proceedings in the proper district court of the United States, and in the manner set forth above as regards vessels from foreign ports without bills of health and entering any port of the United States.

"National quarantine stations now in operation shall be conducted in accordance with the provisions of this Act, and the Supervising Surgeon-General, with the approval of the Secretary of the Treasury, is authorized to designate and mark the boundaries of the quarantine grounds and quarantine anchorages for vessels, which are reserved for use at each United States quarantine station; and any vessel, or officer of any vessel, or other person, trespassing upon such grounds or anchorages, in disregard of the quarantine rules and regulations, shall be deemed guilty of a misdemeanor and subject to arrest, and, upon conviction thereof, be punished by a fine of not more than three hundred dollars, or imprisonment for not more than one year, or both, in the discretion of the court.

"And any master or owner of any vessel, or any person violating any rule or regulation made in accordance with this Act, relating to inspection of vessels, or relating to the prevention of the introduction of contagious or infectious disease; and any master, owner, or agent of any vessel making a false statement relative to the sanitary condition of said vessel or its contents, or as to the health of any passenger or person thereon,

shall be deemed guilty of a misdemeanor and subject to arrest, and, upon conviction thereof, be punished by a fine of not more than five hundred dollars, or imprisonment for not more than one year, or both, in the discretion of the court.

"Medical officers of the United States, duly clothed with authority to act as quarantine officers at any port or place within the United States, and when performing such duties, are hereby authorized to take declarations and administer oaths in matters pertaining to the administration of the quarantine laws and regulations of the United States.

"The Secretary of the Treasury shall, whenever in his judgment it is necessary, make rules and regulations to prevent the introduction of infectious or contagious diseases into one State or Territory, or the District of Columbia, from another State or Territory, or the District of Columbia, and when such rules and regulations have been made they shall be promulgated by the Secretary of the Treasury and enforced by the Sanitary authorities of the States and municipalities, when the State or municipal authorities will undertake to execute or enforce them, but if the State or municipal authorities shall fail or refuse to enforce said rules and regulations, or other rules and regulations made under the provisions of this Act, the President shall execute and enforce the same, and adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such diseases, and may detail or appoint officers for that purpose.

"Whenever yellow fever, cholera, plague, or typhus fever has passed the quarantines of the United States, or in any manner any one of these diseases has gained entrance, or has appeared, within the limits of any State, Territory, or the District of Columbia, the quarantine regulations of the United States, prepared under the direction of the Secretary of the Treasury, shall be supreme and have precedence of State or municipal quarantine laws, rules, or regulations, and the President is authorized to enforce the same within the limits of any State, Territory, or the District of Columbia, and to control the movements of vessels, railway trains, vehicles, or persons within any State, Territory, or the District of Columbia, to prevent these diseases from spreading from one State, Territory, or the District of Columbia, to another State, Territory, or the District of Columbia, and to prevent unnecessary restrictions upon interstate commerce; and whenever, in accordance with the rules and regulations made as herein authorized to prohibit or permit the movement of vessels, railway trains, and vehicles, or transportation of persons, prohibitions or permits have been made or granted, any person violating said prohibition or permit shall be deemed guilty of a misdemeanor, and shall be subject to a fine of not more than one thousand dollars, or imprisonment for not more than twelve months, or both, at the discretion of the court; and any violation of said prohibition or permit shall be reported to the United States District Attorney for the district in which the offense has been committed, who shall thereupon institute necessary pro-

ceedings for the recovery of the penalty herein imposed."

That section six of said Act shall be amended to read as follows:

"That on the arrival of an infected vessel at any port not provided with proper facilities for treatment of the same, the Secretary of the Treasury may remand said vessel, at its own expense, to the nearest national or other quarantine station where accommodations and appliances are provided for the necessary disinfection and treatment of the vessel, passengers, and cargo; and after treatment of any infected vessel, or inspection of any vessel not infected at a national quarantine station, and after certificate shall have been given by the United States quarantine officer at said station that the vessel, cargo, and passengers are each and all free from infectious disease, or danger of conveying the same, said vessel shall be permitted to enter and admitted to entry at any port of the United States named within the certificate. But at any ports where sufficient quarantine provision has been made by State or local authorities, the Secretary of the Treasury may direct vessels bound for said ports to undergo quarantine at said State or local station."

That section eight of said Act shall be amended to read as follows:

"That whenever the proper authorities of a State shall surrender to the United States the use of the buildings, grounds, and disinfecting apparatus at a State or municipal quarantine station, the Secretary of the Treasury shall be authorized to purchase them at a reasonable compensation, or pay a reasonable rental for their use, if in his opinion they are necessary to the United States; and the expense of the said purchase or rental is made payable from the epidemic fund."

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

AN IMPORTANT DISCUSSION OF THE MUNICIPAL CONTROL OF THE MEAT-SUPPLY—THE BLOCKLEY MEDICAL BOARD FOR 1898—DR. JOHN GUITERAS ON THE RECENT YELLOW-FEVER EPIDEMIC IN THE SOUTH—PHILADELPHIA COUNTY MEDICAL SOCIETY—THE RECENT OUTBREAK OF INFECTIOUS DISEASES.

PHILADELPHIA, December 18, 1897.

THE many recent flagrant offences in offering for sale diseased and unwholesome meats in some of the poorer districts of this city resulted in a public meeting at the College of Physicians, on December 6th, under the auspices of the Woman's Health Protective Association, to consider the subject of a better system of municipal meat inspection in this city. Among the experts in sanitation and hygiene who addressed the meeting were Dr. H. D. Gill of the New York City Health Department, who outlined in an interesting manner the methods in vogue in that city, and spoke of a number of improvements in the present defective system of inspection; Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, Washington, D.

C., who considered the questions of Federal control of meat-supplies, and the dangers arising from the distribution of diseased meats; Dr. Leonard Pearson of the Pennsylvania State Veterinary Sanitary Board, who described the almost perfect methods of inspection which prevail in many of the Continental cities, rendering it practically impossible for diseased meat to reach the consumer; Dr. Benjamin Lee of the Pennsylvania State Board of Health, who spoke of trichinosis, and its relation to disease in human beings; and Dr. A. W. Clement, State Veterinarian of Maryland, who dwelt on the subject of the widespread prevalence of tuberculosis in animals. The facts adduced at this meeting proved beyond contradiction the filthy condition of many of the city's slaughterhouses, and the criminal neglect of ordinary sanitary methods practised by many butchers and drovers in caring for and handling cattle, many of which are unfit for food, and served the important purpose of calling general attention to the prevailing lack of suitable meat-inspection in this, as well as in other cities. It may be added that it is highly probable that the corps of official meat-inspectors of Philadelphia, which now numbers but four (with over 100 slaughterhouses to look after), will be at once increased to a more adequate force.

The Department of Charities and Correction has announced the personnel of the Medical Board of the Philadelphia (Blockley) Hospital for the ensuing year, these appointments being as follows: Physicians—Drs. R. G. Curtin, J. H. Musser, F. P. Henry, W. E. Hughes, S. Solis Cohen, F. A. Packard, J. L. Salinger, Samuel Wolfe, James Tyson, T. G. Ashton, A. A. Eshner and Alfred Stengel. Surgeons—Drs. W. J. Hearn, L. W. Steinbach, J. B. Deaver, Orville Horwits, Ernest LaPlace, J. M. Barton, J. William White, Edward Martin, J. Chalmers DaCosta, and A. C. Woods. Obstetricians—Drs. B. C. Hirst, E. P. Davis, G. I. McKelway, J. M. Fisher, R. C. Norris. W. F. Haehnlen, E. L. Peck, and J. B. Shober. Neurologists—Drs. C. K. Mills, F. X. Dercum, J. Hendrie Lloyd, and C. W. Burr. Ophthalmologists—Drs. G. E. de Schweinitz, and C. A. Oliver. Dermatologists—Drs. H. W. Stelwagon and J. Albert Cantrell. Pathologists—Drs. John Guiteras and W. M. L. Coplin. Laryngologists—Drs. C. J. Seltzer and G. M. Marshall. Registrars—Drs. H. B. Allyn, B. F. Stahl, and J. H. Gibbon.

At a special meeting of the Pathological Society of Philadelphia, held December 9th, Dr. John Guiteras, the distinguished yellow-fever expert, who recently completed his investigations for the Government of the late epidemic of this disease in the South, was the guest of the Society, and delivered an important address on "The Yellow-Fever Epidemic of 1897." This epidemic, said Dr. Guiteras, was characterized by the mild character of its cases and by its unseasonable appearance, two factors which have proved no small obstacles to its differentiation from an outbreak of other febrile diseases, such, for instance, as dengue; these factors have also rendered probable a secondary outbreak a year hence. The speaker corroborated the general opinion of the mild character of the infection in the colored race, and drew attention to the fal-

lacy of the belief that a native population enjoy immunity from yellow fever; in fact, many of them are mildly attacked during infancy, when the nature of the illness is unrecognized. A characteristic feature of the beginning of a yellow-fever epidemic, he said, is an increase in the death-rate of the white population of a community, affecting special classes of the population, such, for example, as seamen, if the place is a seaport; coincidentally with this, the health reports show a marked and unusual increase in deaths from such diseases as congestion of the brain and stomach, meningitis, nephritis, and bilious remittent fever, and by such diagnostic mistakes fatal yellow fever is often reported as some other disease, thus masking the real nature of the epidemic. Speaking of the specific cause of yellow fever, Dr. Guiteras drew attention to the morphologic and cultural characteristics possessed in common by Sanarelli's bacillus and the bacillus *x* of Sternberg, and pointed out that both micro-organisms had been found by their respective discoverers in very nearly the same percentage of cases. The claim made by Sanarelli is, however, considerably strengthened by the fact that he has been able to produce, by the injection of his bacillus into dogs, typical symptoms of the disease in these animals. The speaker, in discussing the clinical picture of yellow fever, placed emphasis upon the association of early albuminuria, lack of correlation between pulse and temperature, and the typical facies as an important diagnostic combination. At the close of his address Dr. Guiteras was tendered a reception at the University Club by the members of the Society.

At the last stated meeting of the Philadelphia County Medical Society, held on December 8th, a valuable communication on "The Effects of Digitalis in Producing Hypertrophy of the Heart," was made by Dr. H. A. Hare. The paper was based upon a series of experiments dealing with the action of this drug upon pigs, to which it was given in gradually ascending doses, and the effects noted during life, and after the death of the animals, which were killed within 4½ months. Ten pigs, from the same litter and of practically the same body-weight, were used in the experiments; five received tincture of digitalis in ascending doses from 10 to 50 minims twice daily during the period of observation, while the other five were used as "controls," and received nothing. All the "digitalis pigs" were livelier during life than the others, and also appeared to increase in size. After six weeks the ten pigs were killed, and it was found that the total weight of the five pigs which had received digitalis was twenty pounds more than that of the "control" animals, while their hearts together weighed ¾ ounces more. The pathologic report, by Drs. W. M. L. Coplin and W. P. Reed, showed thickening of the ventricular walls, more marked in the left than the right side of the "digitalis hearts," with an increase in the diameter of the muscular fibers amounting to one-tenth more than those of the "control hearts." From the results of this investigation Dr. Hare concludes that digitalis is capable of producing hypertrophy in the normal heart (probably because of its special affinity for the pneumogastric nerves), and that, if given, to an individual suffering with valvular dis-

ease with lost compensation, it must aid materially in inducing compensatory hypertrophy, in addition to its immediate stimulant action upon the circulatory apparatus.

Dr. James K. Young read a paper on "The Necessity of Making Accurate Measurements in Scoliosis," in which he deprecated the usual approximate method of recording such cases, and urged that instruments of precision be employed to obtain accurate tracings of the deviation of the spine. Dr. Young also demonstrated the application of the trolley scoliosimeter, Elkington's apparatus, Bradford's instrument, and other inventions of the same nature.

Dr. Lawrence Flick reported "Some Unusual Results in the Treatment of Pulmonary Tuberculosis," which he attributed to inunctions of euphorben. Five patients with phthisis, three in the advanced, two in the incipient stage, were thus treated, in all there was marked improvement in both physical signs and symptoms; the incipient cases were pronounced free from physical manifestations of the disease. It should be noted that the patients, in addition to the euphorben inunctions, received strychnin, gastric tonics, and very full doses of creosote.

Dr. H. E. Wetherill showed a number of *medical instruments of precision*, among which was a hygrometer upon which the speaker laid stress as being of value in recording the degree of moisture of different parts of the body in certain pathologic states.

The alarming increase in the mortality from diphtheria in certain sections of the city, of which mention was made in these columns last week, stirred the health authorities to the extent of inaugurating, in the affected districts, a general daily inspection of the throats of all public-school children, and of disinfecting with formaldehyd the infected school buildings and their furnishings. Investigation into the cause of the outbreak of enteric fever which occurred last week in a certain ward has led to the conclusion that the milk-supply was responsible for the increase in this disease. As compared to last week there were 11 more new cases of diphtheria reported for the week ending December 18th, the total being 139, with 32 deaths; there was a decrease of 15 in new cases of typhoid, of which the total was 110; and there was an increase of 7 in new cases of scarlet fever, with a total of 54. The total deaths from all causes were 451, or 50 more than last week. Of this total 112 were of children under five years of age.

TRANSACTIONS OF FOREIGN SOCIETIES

Paris.

THE FATE OF HETEROPLASTIC OSSEOUS GRAFTS—SEROUS PLEURISY ALMOST INVARIABLY TUBERCULOUS—LOCATION OF PROJECTILES IN THE HEAD BY RADIOGRAPHY—TYPHOID FEVER NOT PRODUCED BY EATING OYSTERS—FOREIGN BODIES IN THE ESOPHAGUS WITHOUT SERIOUS SYMPTOMS.

DUBAR reported to the Academy of Medicine, November 16th, the result of a resection of the right wrist for tuberculosis in a girl aged ten years. In order to make the joint firmer, small *osseocartilaginous fragments from the femur of a puppy* were inserted in place

of the bones which had been removed. There was a good recovery, with a painless, firm, and movable wrist. A radiograph was taken to ascertain what became of the fragments of bone, and they were seen to be fixed in the midst of newly formed fibrous tissue, having slightly increased in size.

LE DEMANY has determined from the examination of 80 cases of pleurisy, 50 of them being primary, that the rheumatic diathesis and exposure to cold play almost no rôle in the production of the primary disease. *Inoculation of guinea-pigs with the exudate from 55 pleuritic patients was followed in 47 instances by tuberculosis.* In 8 cases the result was negative. Nevertheless, in four of these, the clinical evidence showed that the pleurisy was of a tuberculous nature. The conclusion was reached that the only serofibrinous pleurisy of microbic origin is the tuberculous. Other microbes found in the pleura merely determine the occurrence of purulent pleurisy.

At the session of November 23d, MAREY described experiments in radiography with Contremoulin's apparatus in order to determine the *exact situation of projectiles in the head.* The method has also been employed in the living, with complete success, in two cases of gunshot wound. LE DENTU described one of these operations. The patient shot himself in the right temple with a revolver. A radiograph showed that the projectile was situated in the frontal lobe 28 millimeters from the cutaneous surface. An opening was made in the bone at the spot indicated, and the bullet found at a distance of 15 millimeters from the surface of the brain, and was extracted without difficulty.

At the session of the Academy of Sciences, November 8th, SABATIER, DUCAMP, and PETIT described their efforts to determine *whether oysters can be the means of producing enteritis due to the coli or typhoid bacillus.* The results of their investigations showed that these germs are not found in oysters, even if the oyster-beds are situated in water contaminated with sewage. Furthermore, oysters into which these bacilli were artificially introduced were invariably found to be free from them twenty-four hours later. The idea, therefore, that typhoid fever may result from the ingestion of these bivalves, is not worthy of credence. This view is sustained in a practical way by statistics, which show that the number of cases of typhoid fever in the town of Cette does not exceed the average for towns of similar size, although its inhabitants eat about two million oysters per year.

MONOD reported before the Surgical Society, November 10th, the details of a *case of foreign body in the rectum*, which he was able to extract without having recourse to any preliminary operation. The foreign body in this case was a glass bottle which the patient was in the habit of introducing into the rectum neck first. He always tied a string to it so that he could pull it out at will, but one day the string broke and the bottle remained in the rectum. By pressing with one hand on the hypogastric region, Monod was able, without difficulty, to pull the bottle out of the rectum with the fingers of the other hand. In the majority of cases, foreign bodies, even of the largest size, may be removed from the rectum by the

natural channel. This surgeon collected reports of 33 cases, in 27 of which extraction was effected without operation. Six of these patients died, but only 3 deaths were attributable to the maneuvers of extraction. An incision in the posterior wall of the rectum is sufficient in the most difficult cases. Resection of the coccyx being only exceptionally indicated. When the foreign body has made its way toward the upper part of the rectum celiotomy should be performed.

At the session of November 17th, MICHAUX described a *case of subphrenic abscess on the right side* and so high up that it was thought that two collections of pus were present, one in the pleural cavity and the other below the diaphragm. A large thoracic clamp was made and turned upward, thus disclosing the entire cavity of the abscess. The patient improved for a time, but died within a month. The autopsy showed that the lesion was a suprahepatic peritoneal tuberculosis. PEYROT described a subphrenic abscess also situated above the liver, and which he had drained by operation. Exploratory puncture of the liver showed that this organ contained a hard mass, the nature of which could not be determined; at the autopsy it was found to be a calcified hydatid cyst. ROUTIER mentioned two cases of subphrenic abscess in which the symptoms were puzzling, and in both instances resection of the costal wall was followed by cure.

HARTMANN resected the appendix in a patient subject to recurrent attacks of inflammation of this organ, and found its cavity to be entirely obliterated in the middle. This gave an opportunity to compare the *virulence of the microbes in the obliterated terminal portion with those in the permeable portion* next to the cecum. In both portions coli bacilli were found, but while cultures made from the contents of the permeable portion exerted no noxious action upon guinea-pigs, cultures from the closed portion were extremely virulent, sufficing to kill a guinea-pig within thirty-six hours.

RENDU communicated to the Medical Society of the Hospitals, November 12th, the details of a case of *infectious gonorrheal rheumatism with death from endocarditis.* The patient sought treatment for pain in the abdomen. Vulvitis, urethritis, or vaginitis were not present, but only slight uterine congestion. Some days later, symptoms of septicemia became well marked. A little liquid withdrawn from the cavity of the cervix uteri, entirely serous and transparent, was examined bacteriologically and found to contain gonococci in large numbers. Peri-arthritis of the left elbow developed, and pus from the resulting abscess also contained gonococci; no other microbes were found. Endocarditis and pericarditis, also of gonococcic origin, developed and terminated the life of the patient.

At the session of November 19th, VARIOT mentioned two cases in which a foreign body remained in the esophagus of a child a long time, in one case a whole year, meanwhile producing no symptoms except an occasional fit of coughing. RENDU knew of a similar case in which a child twelve years of age claimed to have *swallowed a piece of money about the size of a dime.* Nobody believed him, as there were at first no morbid symptoms.

Later, attacks of dyspnea appeared, but it was only with the help of radiography that the presence of a coin in the middle of the esophagus was clearly determined. These cases show the necessity for this method of examination when patients present a similar history.

At the session of November 26th, CAUSSADE announced that experiments made by DIEULAFOY and himself prove that the *virulence of the coli bacillus is greatly increased by its growth in a closed appendix*; and this is true not only for inoculations made with the bacillus itself, but also of those made with its toxins.

At the session of the Biological Society, November 13th, CHABRIE read a paper upon the *elimination of potassium salts in nephritis*. Six patients were observed with the following results: There was a diminution of the potassium salts of the urine, amounting, in one patient, to two-thirds of the normal quantity, in two others, to one-third of the normal quantity, while the other three exhibited variable potassium discharges coincident with improvement in condition, and following the employment of a milk diet. It appears from these observations that potash plays an important part in Bright's disease, and that the use of articles of food which contain these salts in large proportions should be absolutely forbidden to such patients.

At the session of November 20th, HOBBS said that a wet-nurse, aged twenty-three years, died six days after the beginning of a *diarrhea accompanied by the classic symptoms of cholera*. The bacteriologic examination of the stools showed the presence of a germ presenting all the characteristics of the coli bacillus. Its virulence was great, ten drops of a bouillon culture being sufficient to kill a guinea-pig within eighteen hours. The same bacillus was found in the kidney, intestines, spleen, and breasts of this patient.

At the session of the Therapeutic Society of November 10th, BARDET said that while a *chemic or mechanical irritation may set up mucomembranous colitis*, in the majority of cases, especially in men, this disease is due to hyperacidity. It is, therefore, necessary in these cases, to examine into the condition of the stomach. MATHIEU said that in cases of genuine mucomembranous colitis, almost the whole intestine is affected, and not alone the sigmoid flexure as some observers have claimed. It has also been stated that this disease is to the intestine what eczema is to the skin, being apparently like the latter affection, increased by irritation of the affected locality or of its neighborhood, by emotion, fatigue, or visceral disturbances of any kind.

At the session of November 24th, a note was read from MONCORVO describing the result of the *treatment of chyluria in the tropics* by means of the administration of ichthyol. The dose used was from 7 to 20 grains daily. A marked improvement soon followed, and patients who had been treated without benefit with other drugs were completely cured by the use of ichthyol.

Portable Piano for Invalids.—An English firm has designed a small portable piano, which is suspended from a frame over the bed and enables an invalid to while away many weary hours.

REVIEWS.

THE DISEASES OF WOMEN. A Handbook for Students and Practitioners. By J. BLAND SUTTON, F.R.C.S., Eng., Surgeon to the Chelsea Hospital for Women; Assistant Surgeon, Middlesex Hospital, London, and ARTHUR E. GILES, M.D., B.SC., London., F.R.C.S., Edin., Assistant Surgeon, Chelsea Hospital for Women, London. With 115 illustrations. Philadelphia: W. A. Saunders, 1897.

THIS is a small volume of about 400 pages. As the authors say in their preface, it has been their earnest desire to relate facts and to describe methods in a way that may be useful to students in preparing for examination. The subjects are, therefore, briefly treated and rather in the form of definitions than in that of a continuous treatise. The illustrations are good, some of them representing original work by Giles. The paper is good and the type clear, but the binding does not seem strong enough for the weight of the paper.

THERAPEUTIC HINTS.

For the Vomiting of Pregnancy.—POZZI reports good results from the treatment of this affection by means of hypodermic injections of cocain in the epigastric region, and states that this method has proved successful after hypodermics of morphin and the internal administration of cocain had been unsuccessful tried. He injects 1/6-grain of cocain once or twice daily immediately before meals in the region mentioned. The improvement is permanent, and no unfavorable concomitants have been noted.

For Chapped Hands.—

R	Menthol	.	.	.	.	.	gr. xxiv
	Salol	}	aa	.	.	.	gr. xlv
	Ol. olivæ			.	.	.	
	Lanolini	.	.	.	.	.	3 iii.

M. Sig. Apply to the hands twice daily.

For the Diarrhea of Phthisis.—

R	Pulv. catechu	.	.	.	.	gr. xxxvi
	Syr. krameriaë	.	.	.	.	3 i
	Tinct. cinnamomi	.	.	.	.	gtt. x
	Vin. rubri	.	.	.	.	3 iii.

M. Sig. A tablespoonful three or four times daily.

For Hemorrhoids.—

R	Chrysarobini	.	.	.	.	gr. xxv
	Iodoformi	.	.	.	.	gr. x
	Ext. belladonnæ	.	.	.	.	gr. xx
	Vaselini	.	.	.	.	3 i.

M. Ft. ungt. Sig. Apply locally twice daily.

For Spasmodic Cough in Adults.—

R	Bromoformi	.	.	.	.	3 i gr. l
	Tr. gelsemii	.	.	.	.	3 ii
	Syr. lactucarii	.	.	.	.	3 ii
	Pulv. acaciæ	.	.	.	.	q. s.

M. Sig. One teaspoonful three to four times daily.

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